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ABSTRACT

The report provides an interim assessment and discussion of the activities of the Research for Better Schools' Employer-Based Career Education Program during FY 1974. The introduction (section 1) outlines the report's format and summarizes the evaluation staff's activities. The summative evaluation overview (section 2) and the formative evaluation overview (section 3) present the rationale for both types of evaluation and generally describe the processes used for each. Section 4 and 5, on student populations and instruments and procedures, describe the students in the activities of the career education program, the groups of students used for comparisons, and the tests and means of administration used to make the comparison between the groups. Section 6 deals with pretest results for which the analysis is completed. Section 7 deals specifically with the common instruments being cooperatively developed by the four employer-based career education programs and the National Institute of Education. Section 8 presents summative evaluation results which deal with testing hypotheses relating to the career education program in general. Section 9 presents formative evaluation results which are specific to the Research for Better Schools' implementation of a career education program. Section 10 summarizes the report and makes recommendations. (Author)

Summative Evaluation Report

3

INTERIM EVALUATION REPORT

Submitted by

Career Education Program
EXPERIENCE-BASED CAREER EDUCATION

Research for Better Schools, Inc.
1700 Market Street, Suite 1700
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March 15, 1974

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EXECUTIVE SUMMARY

I. INTRODUCTION

This report represents a mid-year review of the evaluation process and results from the Research for Better Schools Career Education Program. Extensive data, both descriptive and analytic, are presented. Conclusions are drawn to the extent possible without end of the year posttest results. The report itself is organized into ten sections which form four major topical groupings as follows:

1.	Evaluation Overview	-	Sections I. II. and III.
2.	Procedures	-	Sections IV. and V.
3.	Results	-	Sections VI. VII. XIII and IX.
4.	Discussion	-	Section X.

The evaluation plan for FY 1974 was built around the component structure of the project, wherein fifteen separate components were specified. The major component groupings were Management Systems, Support Systems and Instructional Systems. The third group was intended to be the focus of the evaluation effort.

Several facets of evaluation have received emphasis over the course of the year. Briefly they are:

1. Computerized processing of program records has been developed to a fairly sophisticated level to handle operational, evaluative and research tasks.
2. Extensive effort has been put into the development of instruments germane, but not confined, to the Career Education Program.
3. A reporting system, which goes beyond the contractual requirements, has been instituted and is under revision with the goal of making evaluation results more useable.

II. SUMMATIVE EVALUATION REVIEW

The summative evaluation has been designed principally to determine the overall effects of the program on students, employers and parents. It also addresses institutional feasibility and planning issues from a program-wide perspective.

Student effects hypotheses have been stipulated regarding development in basic skills, career maturity, and career knowledge. Other effects hypotheses relate to the sufficiency of employer resources, employer attitude, parent attitude, institutional structures, program costs and program marketability. These hypotheses will be tested via comparisons between experimental and control groups on a series of formalized measures, and the use of informal instrumentation, observation and unobtrusive measures.

III. FORMATIVE EVALUATION OVERVIEW

The formative evaluation has been designed to gather information which is useful for program development and project management. Formative results often form the basis for summative inquiries. Only the components directly related to the provision of instruction have been included in the formative evaluation design. They are: Employer Support, Employer Utilization, Basic Skills, Career Development, Career Guidance and Instructional Systems. Each of these components is to be evaluated with regard to rationale and conduct, objective effectiveness, and cost. Results are to be reported in individual task documents for each component over the course of the year.

IV. STUDENT POPULATIONS

Four different student groups have been selected for analysis of the Career Education Program. The first two are "experimental" groups, while

the last two are "control" groups:

1. ACE Group - These students (76) were twelfth graders spending their second year in the program. They experience a comprehensive educational program at the Academy for Career Education.
2. ACE-Olney Group - These students (76) were tenth and eleventh graders spending their first year in the program. They have the core program (Career Development, Career Guidance, Basic Skills) and receive other courses and activities at their home school.
3. Comparison Group - These students (28) were eleventh graders who applied and were accepted to the program, but decided not to enroll. They participate in their home school program.
4. Context Group - These students (81) were tenth, eleventh and twelfth graders who were randomly selected for comparative purposes. They participate in their home school program.

All student groups, except the ACE Group, were drawn entirely from a large secondary school (Olney High School) in the Philadelphia School District.

V. INSTRUMENTS AND PROCEDURES

A pretest-posttest instrument package was constructed for measurement of all students at the beginning and end of the school year. This consisted of the Comprehensive Tests of Basic Skills (CTBS), the Career Maturity Inventory (CMI), the Assessment of Student Attitudes Questionnaire (ASA), and the Student Demographic Data Questionnaire (SDQ). The first two are standardized, commercially available instruments. The last two are measures developed for this project.

Another series of instruments has been developed for the experimental

students only. This consists of the Employer Cluster Tests, the Student Opinion Survey, the Parent Opinion Survey, the Employer Opinion Survey, the Employer Checklist and Interview, the Career Exploration Student Questionnaire, and a number of forms. These instruments are administered in varying cycles. Their principal use is in formative evaluation although synthesized results have summative implications.

The pretest-posttest instruments are administered by the evaluation staff under standardized conditions. Other instruments are administered by the evaluation staff and operational staff members.

VI. PRETEST RESULTS

The Student Demographic Data Questionnaire (SDQ) provided information regarding the background characteristics of Academy students and their counterparts in the control groups. The students selected seem to be representative of an urban population. There appeared to be no between-group differences for previous school attendance or for parental occupation. Between-group differences were found for previous grade point averages (GPA) of the groups, post-secondary plans of the groups, and the racial and sexual compositions of the groups. The ACE students had a GPA of C-, the ACE-Olney group had a GPA of C, and the control groups averaged between the two experimental groups. All four groups showed a high level of interest in post-secondary education. Sex and racial data were collected only for the Academy groups. The control group students were more interested in immediate post-secondary employment than were the experimental groups. The experimental groups also showed a greater diversity in the post-secondary planning than did the control groups. The ACE Group was approximately evenly divided between Males and Females; 70% of the ACE Group was Black and 30% was White. The ACE-Olney Group was 55% Male and

45% Female; 80% of this group was Black and 20% was White. The Academy program seems to be attracting significantly more Blacks than Whites. If this trend continues, the Academy program will have served members of only one population group. The uneven racial composition should be studied further.

The Career Maturity Inventory (CMI) was administered to all experimental and control groups. Three subtests of the CMI revealed distinct differences between the experimental and control groups. The subtests on which the ACE and ACE-Olney groups were equal to one another and significantly superior to the control groups were Occupational Information, Goal Selection, and Problem Solving. The two other subtests of the CMI, Attitude Scale and Planning, presented inconclusive results with the ACE Group superior to the Comparison Group on one and the ACE and ACE-Olney groups superior to only the Context Group on the other. The significant differences on the three scales seem to be a factor in students' decisions to participate in the Academy program and warrant further investigation.

The Comprehensive Tests of Basic Skills (CTBS) were also administered to all experimental and control groups. No significant differences between groups were demonstrated on the Arithmetic subtests. On each of the Reading subtests, the ACE Group was significantly different only from the Comparison Group; while it seems clear that the ACE students upon entrance to 11th grade were superior in reading skills to students who applied and dropped, implications of this single comparison are difficult to draw. Other group comparisons support the contention that the experimental and control groups are equal in achievement on other basic skills.

The Assessment of Student Attitudes Survey (ASA) was administered to all groups and revealed no differences between groups in their attitudes toward education, program curriculum, program counseling, or learning. The

only difference between groups was between the ACE and ACE-Olney groups in their attitude toward program resources; the ACE students appear to be more positive in their attitude toward program resources. This difference may be attributed to the greater length on time the ACE Group has been enrolled in the experimental program

The experimental and control groups were equal on many of the instruments administered. On the CTBS, all groups were statistically similar with the exception that the ACE Group was superior to the Comparison Group on Reading subtests. The ASA results indicated that all groups were similar with the exception that the ACE Group was superior to the ACE-Olney Group on the Attitude Toward Program Resources subscale.

The CMI and background characteristics obtained from the SDQ did reveal some intergroup differences that warrant further study. The ACE and ACE-Olney groups were superior to both control groups on most subtests of the CMI. The program also seems to be differentially attracting Black and White students, with Blacks forming a large majority of the students. Thus, both career maturity and race seem to be factors which differentiate between students who display interest and enroll from those who display interest and do not enroll in the Academy program. Reasons for these differences necessitate further study.

VII. COMMON INSTRUMENT RESULTS

Of the four common instruments designed for utilization at the EBCE sites, only the Student Opinion Survey had been administered in time for analysis and inclusion in the present report. Results from the other instruments will be reported in Special Reports, Task Reports and the Final Report. In general, students rated the Career Education Program highly with particular

emphasis on the program's interest value, individualization and opportunity for learning. The more structured nature of the RBS program was reflected in students' lower ratings of ability to determine the amount of time spent in activities. The fact that these ratings were not extremely low, and that other perceptions were very favorable, would suggest that this is not a serious concern. It may not even be a criticism, but rather a simple statement of fact. It should be pursued to conclusion just in case a problem is there. Students evidenced a high vocational attitude, especially regarding their anticipation of employment. Most students seemed to think that gaining knowledge about careers and jobs was the most important reason for entering the Career Education Program. Students were strongly favorable toward the Career Education Program in comparison with traditional school programs. When presented with a series of learning objectives, students thought all of them were important. Interpersonal and social skills and self-evaluation were considered the least important. The ratings of program success in achieving the objectives were not as high as the rated importance of the objectives. The difference was fairly consistent, but difficult to interpret because the Zero Point for importance and effectiveness may not be the same. For each objective the ACE Group ratings of effectiveness were lower than the ratings accorded by the ACE-Olney Group. This was consistent with the other results obtained. Thus, it would seem that twelfth graders had a generally less favorable attitude toward the program than tenth and eleventh graders. Most students planned to get a high school diploma. Only a minority were working during the school term, but some ACE Group students were working a substantial number of hours per week. Very few students replied that their vocational activities interfered with any of their other activities.

VIII. INTERIM SUMMATIVE EVALUATION RESULTS

This section has presented summative results on the Management Systems Components, Support Systems Components and pretest-posttest data on twelfth graders. Summative data at this time in the experimental year must be considered tentative. Extensive analyses were not possible given the limited data available. Discussion of Management and Support systems was based largely on separate reports previously submitted for those areas. Pretest-posttest results represented preliminary data on twelfth graders only. In Management Systems the following positive trends were noted:

1. continuing development of strong and useful Academy Board of Directors
2. continuing licensure of the Academy
3. extensive development of relationship with the Philadelphia School District
4. less centralization of project management
5. development of a cost tracking system and approaches to cost analysis
6. improvement in reporting system to NIE
7. establishment of student comparison groups
8. development of new information system

The following problem areas were also discussed:

1. extent of policy codification necessary
2. management of relations with the Chamber of Commerce
3. development of a reporting system focused on evaluation usability

Each of the areas listed in the operating plans as priorities was discussed.

In Support Systems the following positive developments were noted:

1. maintenance of adequate staffing for workscope
2. provision of better resources for articulation across teams and

components

3. recruitment of a large and diverse student body for this year
4. maintenance of efficient logistical systems
5. continuation of effective Supplementary Program

The following problem areas were also encountered:

1. articulation between program staff and Chamber of Commerce staff
2. needed improvement in training efforts

More information on these issues may be found in Summative Reports 1 and 2.

Analyses of the pretest-posttest results of the Comprehensive Tests of Basic Skills for twelfth grade students showed significant gains in most areas of reading and arithmetic. The average gain was .6 of a year over a 5 month instructional period. Students who were not involved in Individualized Learning Center activities did not fare well on these tests; in fact, an average loss was observed. The implications of these findings require further study. These results must be regarded as tentative since only a subgroup of students were tested and no control group data are available.

IX. INTERIM FORMATIVE EVALUATION RESULTS

The formative evaluation results of the report describe the Career Education Program and presents formative evaluation results regarding the recruitment and selection of employers and site analysis, the support systems of the program, the use of advisors, the recruitment and selection of students, the instructional services provided to students, and the cost of providing instructional services to students.

The Research for Better Schools Career Education Program consists of four elements: the Career Development Unit, the Career Guidance Unit, the Basic Skills Unit, and Supplementary Activities. The first three are available to

all students in the program; the last is limited to 12th grade students only, since Olney High School provides those aspects of the program to 10th and 11th grade students.

These activities are provided or supported by 32 full-time professional staff. The staff fall into four categories: Program Administration (3), Evaluation (4), Design and Development (13), and Operations (12). Staff were viewed as being capable in delivering all components of the program. The only staff area in need of further development concerned the complex relationships between RBS and the Chamber of Commerce. The tasks to be accomplished are demanding, and working relationships need to be clarified and strengthened so that maximum efficiency may be achieved. Also relating to staff pre-operational training efforts were minimal due to the late date of finalization of the contract with the National Institute of Education.

Facilities used in the Career Education Program embrace four major sites: The Academy for Career Education, the RBS offices, the Greater Philadelphia Chamber of Commerce, and employer sites. The facilities are adequate for the needs of the current enrollment.

The recruitment and selection of employers is based on the clustering of employers into areas of related activities. Last year there were 12 clusters. This year 4 clusters have been added to the program, representing a 33 per cent increase in this type of activity. A total of 84 employers have been recruited and selected for participation in the Career Education Program. Of these, 53 were recruited last year and 31 were recruited this year. Of the 53 participating in FY 1973, 14 did not participate in FY 1974. Reasons for non-participation include: the activities were not adequate, funds or staff were unavailable, students were perceived as insufficiently motivated, and the employers involved were in the process of an internal reorganization. An additional 9 em-

ployers have withdrawn from the program in FY 1974. Reasons for these withdrawals include: the activities provided were not adequate, funds or staff were unavailable, and involvement by the organization in a major building campaign. Of the 70 employers recruited and selected for participation in the FY 1974 Career Education Program, 61 or 87 per cent remain actively involved and interested in the program.

Policy making for the Career Education Program is vested in the Board of Directors of the Academy for Career Education. The composition of this board includes representatives from industry, labor, education and the community. Most advisory groups have been incorporated into the decision making process by granting representation on the Board of Directors of the Academy. In addition to traditional advisory groups already having membership on the Board, the offer of Board membership has been extended to parent and student groups. Other advisory groups include NIE, the other Experience-Based Career Education Programs, and the Board of Directors of Research for Better Schools.

Student recruitment and selection in FY 1974 consisted of the selection and enrollment of 10th and 11th grade students, who would participate in the core aspects of the Career Education Program (Career Development, Career Guidance, and Basic Skills) and receive the supplementary aspects of their program from their sending school. A total of 69 students were accepted and enrolled in the Academy for Career Education program. An additional 92 students were accepted but declined to participate in the program. A total of 200 students were considered ineligible for the program. The greater portion of students accepted were 11th grade students. Acceptance was about equal by sex although more males than females enrolled. Few Whites applied for the program, and as a result 80 per cent of the enrollees were Black. If this racial trend continues, the Career Education Program will have served members of only one

population subgroup. Analysis of data on previous grade average indicates that students with 70-89 averages who were accepted for the program decide to enroll, while students who were accepted with 60-69 averages declined to enroll. Two factors of the student recruitment process which warrant further investigation are the race factor and the apparent self-monitoring of decisions to enroll based on previous grade averages.

A review of the instructional services provided during the fifth quarter shows that a total of 20,080 hours of instruction were scheduled and that 16,688 hours of instruction were attended. Rates of attendance varied sharply within the units of the Career Education Program. Rates of attendance were reasonable for the Career Development Unit, the Career Guidance Unit, and the Supplementary Activities and well below expectation for the Basic Skills Unit. Students enrolled in activities which represent a total of 221.57 credits and actually earned 199.47 of those credits. Rates of earning credits were above 80 per cent for all but 12th grade students in the Basic Skills Unit, where the rate was 71.5 per cent. The rate of earning credits is reflected in the grade averages of students in the various activities. Grade averages were at C+ level or above for 10th and 11th grade students for all activities. Twelfth grade students had a B or B- average in all activities except the Basic Skills Unit, where they had a C average. Areas of particular concern are the rate of earning of credit by 12th grade students in the Basic Skills Unit and the rate of attendance by all students in the Basic Skills Unit.

The cost of providing instructional services was $602.07 per student; this is a weighted cost which accounts for 12th grade participation in the Supplementary Activities. The cost per student for the core program of Career Development, Career Guidance, and Basic Skills was $511.88. Both of these figures are per quarter. The cost per credit earned was $401.76. Total operational

expenditures in the Career Education Program in the fifth quarter were $91,148; this figure includes an advance of $50,000 on a subcontract for instructional services. The average quarterly expenditure for the fifth and sixth quarters was $80,120.50. Projected costs for providing 12 months of instructional services to 10th and 11th grade students are $1,852.52 per student. Projected costs for providing 9 months of instructional services to 12th grade students graduating in June 1974 are $2,223.00 per student. Both these figures are below the anticipated yearly cost per student of $3,309.36.

X. DISCUSSION AND RECOMMENDATIONS

Selected program aspects have been discussed, and recommendations derived from consideration of the issues involved. These recommendations were as follows:

Recommendation 1. Prior to funding next year, NIE should determine the content and extensiveness of major evaluation reports which are to be used for management and planning purposes. This would better enable the incorporation of NIE's interests into evaluation planning, and would result in more focused and usable evaluation reports. Such planning would have been difficult in the past, but, as the programs have achieved more resolution, such action has become more feasible.

Recommendation 2. After the nature and extent of reporting have been determined, a realistic level of resources should be allocated in the budget for the effort required.

Recommendation 3. Every effort should be made to enable early recruiting of students, and selection should be made by random assignment of qualified candidates to experimental and control groups.

Recommendation 4. The status of existing instrumentation should be assessed. The characteristics of standardized instrumentation as they relate to program objectives and the valid determination of comparative program effects should be investigated. A coordinated effort to maximize the technical soundness and generalizability of project-developed instrumentation should be undertaken.

Recommendation 5. Project staff should make a special effort through counseling, instructional and personal interaction activities to determine the nature and extent of dissatisfaction among twelfth graders. If the phenomenon can be causally defined, a concerted effort should be made to correct it.

Recommendation 6. Since it is possible that the observed phenomenon is an experimental effect, e.g., Hawthorne depreciation or cummulative measurement fatigue, it should be carefully observed next year, when comparable longitudinal data may be collected.

Recommendation 7. The evaluation task load should be reexamined and prioritized to definitely permit the production of user-referenced reports and assessment of evaluation utilization. The possibility of excizing some facets of the evaluation in order to enhance these priority areas should be considered particularly for next year.

Recommendation 8. Possible program deficiencies in the areas of least evident basic skills student gains should be investigated. The program materials or its utilization may be manipulated to better serve apparent student needs.

Recommendation 9. In view of the fact that students not in the Individualized Learning Center seem to regress (some of it is artifactual), non-assignment to this activity should be made very carefully. The alternatives to Center assignment should also be well considered.

Recommendation 10. Continuing efforts should be made to identify experience clusters relevant to the Career Education Program and to recruit and select employers to both maintain and extend the cluster system.

Recommendation 11. A total of 670 students should be identified who could be accepted for the Career Education Program; these 670 would meet the Career Education Program's needs for enrollment and control group students. The figure of 670 students was derived in the following manner:

520 = 2 x 1.3 x desired new enrollment of 200

+ 150 = 1.5 desired control groups of 100

670 = the number of students who must be identified as being acceptable for the program.

Recommendation 12. Since the selection of students for the Career Education Program is to be on a random basis next year, efforts to obtain a representative racial composition will have to be focused in the area of recruitment. Efforts to recruit students should be directed toward all racial subgroups of the population.

Recommendation 13. Efforts should be made to increase the motivation of students to both attend and achieve in Basic Skills Activities. Efforts to increase motivation have relied on intrinsic factors in the past; an investigation of the possible application of a combination of intrinsic and extrinsic motivational factors to the Basic Skills Unit should be conducted.

Recommendation 14. Participation in the specialization aspects of the Career Development and Career Guidance Programs should be strongly encouraged by the Counselor-Coordinators. Students should be made more aware of the personal benefits that can accrue to them by such participation.

Recommendation 15. A more concisely defined relationship should be developed with the Greater Philadelphia Chamber of Commerce to ameliorate any confusions regarding responsibility or accountability for the development

and implementation of Career Development and Career Guidance activities. The roles of the team leaders of the Career Development and Career Guidance Units and the Project Director of the Chamber should be defined in terms of explicit function and related responsibilities.

Recommendation 16. Means of incorporating aspects of the Supplementary Activities into the other units of the Career Education Program should be investigated. This recommendation might relate to means of increasing student motivation in the Basic Skills Unit (Recommendation 13).

Summative Evaluation Report

3

INTERIM EVALUATION REPORT

I. INTRODUCTION

The Interim Evaluation Report provides an interim assessment and discussion of the activities of the Research for Better Schools' Career Education Program during FY 1974. The Introduction (Section I) outlines the format and context of the report and capsulizes the activities of the evaluation staff over the past year. The Summative Evaluation Overview (Section II) and the Formative Evaluation Overview (Section III) present the rationale for both types of evaluation and generally describe the processes used for each. The sections on Student Populations (Section IV) and Instruments and Procedures (Section V) describe the students in the activities of the Career Education Program, the groups of students used for comparisons, and the tests and means of administration that will be used to make the comparisons between the groups. Interim results are presented in Sections VI-IX of this report. Section VI deals with pretest results for which the analysis is completed. Section VII deals specifically with the common instruments which are being cooperatively developed by the four Experience-Based Career Education (EBCE) Programs and the National Institute of Education. Section VIII presents summative evaluation results which deal with testing of hypotheses which relate to the Career Education Program in general. And Section IX presents formative evaluation results which are specific to the Research for Better Schools' implementation of a Career Education Program. Section X discusses and summarizes the information presented in other sections of the report.

In its evaluation plan (appended to Operating Plans for FY 1974) the Research for Better Schools Career Education Program was discussed within the framework of fifteen separate components. These components were linked into three groupings which were planned for as units. The first group was termed "Management Systems" and was composed of the following components:

1. Policy Determination
2. Institutional Relationships
3. Community Relations
4. Planning and Formative Evaluation
5. Program Administration and Management

These components deal primarily with management and public relations. The second group was termed "Support Systems" and was composed of the following components:

1. Students
2. Staff
3. Logistics
4. Supplementary Programs

These components deal primarily with project inputs. The third group consisted of those components most central to the learning process intended by the program. It was composed of the following components:

1. Employer Support
2. Employer Utilization
3. Basic Skills
4. Career Development Skills
5. Guidance
6. Instructional Systems

The analysis of this third group was intended to be the focus of this year's evaluation effort. The final product of the evaluation of each component would be an evaluation report on each component which would also be an input for the development of replication specifications. It was intended that evaluation results would be fedback to staff in a usable form on a regular basis.

The plan of evaluating the components identified above has been followed in a manner similar to that prescribed in the "Evaluation Plan for FY 1974." In the process certain elements have become focal and taken on priority status. Although they do not fully describe the FY 1974 evaluation effort, a discussion of these emphasized elements may serve to characterize the evaluation of RBS' Career Education Program.

Computerized processing of program records has been accorded much attention and time. All permanent records and much interim data on students have been prepared for machine processing. The data system, described in outline in the Data Format Manual for FY 1974, has become fully operational during the current project year. Several time-consuming manual processes are being phased out due to this automated capacity for handling credits, grades, attendance, scheduling, test and questionnaire scoring and analysis, etc. The software for a sophisticated system of monitoring student absences and recording achievement per unit time is presently being developed as an extention of the data system. The focus on automated data processing is considered important as a tool for managing the eventually larger student groups and enabling rigorous and serious research on present and future program effects.

Closely allied with the computer system has been the development of a unified forms system to assure accurate and appropriate input of records. The evaluation staff has undertaken the responsibility of developing, implementing,

processing and coordinating all forms and records utilized within the program. This has been done in an effort to reduce overlap, information gaps, and conflicting procedures. A complete discussion of the design of this system may be found in Task Report 15A1, Develop Instructional Systems for Facilitating the Integration, Utilization and Communication of Learning Resources.

Extensive resources have been applied to instrument development. The following are principal among the instruments in process

1. Assessment of Student Attitudes Survey - designed as a pre-and post-test of overall student attitude toward learning and specific elements of the learning environment.
2. Employer Cluster Tests - designed as pre-and posttests of student learning at employer sites each quarter.
3. Student Opinion Survey - designed as a measure of attitudes and opinions, to be administered as a common instrument at each participating laboratory.
4. Parent Opinion Survey - designed as a measure of attitudes and opinions, to be administered as a common instrument at each participating laboratory.
5. Employer Checklist and Interview - designed to monitor the employer resource recruitment, orientation and management process, as well as gather employer perceptions concerning the program.
6. Student Needs and Interests Survey - designed to aid in student scheduling and to monitor individualization.

The lack of appropriate instrumentation was one of the most formidable evaluation problems last year. Much has been done to remedy the situation this year, but the instrument development process will require at least another year for completion.

A flexible reporting system has been instituted in an attempt to meet the needs of both program staff and the National Institute of Education (NIE). Summative and Formative Reporting Schedules will be described below. A third reporting vehicle, Special Reports, has been included to handle reports not in the original schedule but seen as necessary by the evaluation, program or NIE staff. The Special Reports thus far scheduled are:

1. Report on Recruitment and Selection - 1/30/74
2. Report on Student Characteristics - 2/28/74
3. Revised Analysis Plan - 3/30/74
4. Report on Instructional Units for Fifth Quarter - 3/30/74

Others will be scheduled as needs are made evident.

These elements are incorporated into the evaluation plan, which attempts to monitor major processes and assess principal effects of the RBS Career Eduction Program. For a complete discussion of evaluation issues and projections see Appendix A and Appendix B of the Operating Plans for FY 1974. The sections below present more detail on summative and formative plans.

II. SUMMATIVE EVALUATION OVERVIEW

Of the many available definitional differences between summative and formative evaluation, none seems to be both clearly understandable and technically precise. Therefore, a distinction will be made here based upon differences that experience suggests. These are practical lines of demarcation and any resemblance to theoretical issues is purely coincidental. For the purpose of this report, any evaluation activity which is related to a specific unit or subunit within the program will be considered formative. Any evaluation activity which concerns the project as a whole or several units in a

summary fashion will be considered summative. For example, a report on the Career Development Unit employing original analyses of data related to that unit and confined to that unit would be formative. Another report which reviewed previous analyses and documents related to the Career Development Unit and discussed them in the context of other program units would be summative. Any evaluation activity involving the study of effects which involve the program as a whole would also be summative. Formative evaluation intends to inform the project staff of unit strengths and weaknesses. Formative evaluation also suggests hypotheses to be tested and problem areas to be assessed in summative evaluation. Summative evaluation intends to judge project conduct and effectiveneness, and to present results for external review.

In its design the summative evaluation for FY 1974 included a summary review of the Support Systems and Management Systems Components. More attention than originally planned has been given to these components due to the deletion from the workscope of developmental reports on them; in many cases the evaluation report will be the only documentation of these components. The summative focus, however, will be on analyzing student effects. It is assumed that such effects will be a result of the instructional components or the program as a whole; instructional components will not be treated individually because there are no grounds for hypothesizing mutually exclusive effects. Analyses of costs and marketability have also been indicated in the summative plan. Both of these areas are embryonic and the evaluation is dependent upon administrative decisions regarding how cost and marketability are to be treated. In the least, a documentation and analysis of what occurred in these areas can be performed. Gathering and analyzing employer and parent data are also summative concerns.

A final area of inquiry is the institutional structure necessary to conduct a program of this type.

Relating to the above outline of summative concerns the following principal hypotheses are presented for testing during FY 1974:

Student Effects

1. Students will gain significantly ($p < .10$) in basic skills over the course of the year.
2. Students will gain significantly ($p < .10$) more in basic skills than comparable students in a traditional school.
3. Students will gain significantly ($p < .10$) in career maturity.
4. Students will gain significantly ($p < .10$) more in career maturity than comparable students in a traditional school.
5. Students will evidence a significantly ($p < .10$) more positive attitude toward school than students in a traditional school.
6. Students will gain significantly ($p < .10$) in career knowledge over the course of cluster experiences.

Other Effects

1. Employers will be able to provide learning experiences sufficient to meet student needs and interests.
2. Employers will evidence a positive attitude and commitment regarding the program.
3. Parents will evidence a positive attitude and commitment regarding the program.

4. Institutional structures will be established to enable the conduct of the program.

5. It will be demonstrated that the program can be operated on a feasible cost basis.

6. It will be demonstrated that there is a ready market for the program.

The student effects hypotheses will be tested using the experimental and control groups with instruments as discussed below in procedural sections. The design is a small scale, quasi-experimental one. The other hypotheses are not amenable to traditional statistical testing, but all available data will be presented to argue a conclusion. Results will be discussed in the following summative evaluation reports:

REPORT	DUE DATE
1. Report on Management Systems Components	1/ 2/74
2. Report on Support Systems Components	2/28/74
3. Interim Evaluation Report	3/15/74
4. Book of Measures	7/ 1/74
5. Report on Instructional Systems Components	7/15/74
6. Report on Cost and Marketability	7/15/74
7. Final Evaluation Report	9/30/74

III. FORMATIVE EVALUATION OVERVIEW

Of the fifteen program components, the six most relevant to instruction form the principal subject matter of the formative evaluation design. They are: Employer Support, Employer Utilization, Basic Skills, Career Development Skills, Guidance and Instructional Systems. The remaining components,

e.g., Supplementary Programs, may be included as they relate to the instructional program but will not be given priority attention. For each of the instrumental components the formative evaluation process will be organized to address the issues identified in the "Evaluation Plan for FY 1974" and generally to provide the following information:

1. An explication of the purpose, composition, organization, procedures, and operational strategies.
2. Evidence regarding the degree to which components are meeting stated objectives.
3. Detailed information on the costs associated with each component.

This information will be gathered by procedures to be discussed below. In general, the formative evaluation is more flexible than the summative, less formally structured and less statistically sophisticated. The formative effort will result in the following reports:

REPORT	DUE DATE
1. Instructional Systems Design	12/31/73
2. Employer Support Evaluation	4/15/74
3. Guidance Evaluation I	4/15/74
4. Basic Skills Evaluation	4/15/74
5. Instructional Systems Field Test	4/15/74
6. Employer Utilization Evaluation	5/ 1/74
7. Guidance Evaluation II	6/ 1/74
8. Career Development Evaluation	6/ 1/74
9. Instructional Systems Evaluation	7/ 1/74

For each instructional unit except Guidance one evaluation report will be completed during the year; the Guidance tasks have been split into two

reports. For Instructional Systems there are two additional reports because the evaluation staff is designing and field testing, as well as evaluating, that unit. All other components are being designed and field tested by the developmental and operational staff in each area. This outline of the objectives and products of formative evaluation will be expanded in procedural and results sections below.

IV. STUDENT POPULATIONS

Four different student groups have been selected for analysis of the Career Education Program. Two of these groups are involved in the experimental program:

1. ACE Group - (n=76) These students were in the Academy program last year for their eleventh grade experience and are continuing this year toward graduation. They are participating in the comprehensive program: all their school activities are conducted through the Academy. They will receive Academy for Career Education diplomas upon graduation this year.
2. ACE-Olney Group - (n=76) These students were in the Academy program for the first time this year, and their involvement is on a shared-time basis with Olney High School, a large secondary school in the Philadelphia public school system. They participate in the core Academy program (Career Development, Career Guidance and Basic Skills), while receiving other courses and extracurricular activities at their home school. They remain on Olney's rolls and will receive an Olney diploma. This group was composed of tenth and eleventh graders at entrance.

Two additional groups of students were selected for the purpose of comparing the progress of students in the Academy program with students in a traditional high school program. These control groups were selected from the Olney High School student body:

3. Comparison Group - (n=28) These students applied for the Academy program, were accepted, but eventually declined to enroll. They were selected for comparison because they volunteered for a career-oriented program (evidencing a level of interest), and they passed the program's requirements. They were all eleventh graders.

4. Context Group - (n=81) These students represent a random selection of equal numbers of tenth, eleventh and twelfth grade students from Olney High School. They were selected to provide comparative data on the "typical" Olney student.

Of these four student groups, all but the ACE Group were selected from the Olney High School student body. The ACE-Olney and Comparison Groups were selected from among volunteers for the program (See Special Report, "Recruitment and Selection.") The Context Group was randomly selected from among their peers. Application for the ACE Groups was open to all public and non-public eleventh grade high school students in Philadelphia last year. These students were selected from a stratified random sample of the applicants; the group was intended to be representative of secondary students city-wide (See FY 1973 Evaluation Report 5.1.1, "Publicity and Selection Process"). Since these groups differ in their origin and do not fit into a traditional experimental design, extensive analysis of group characteristics will be performed. A precise analysis of between group differences, particularly with respect to dependent variable measures, needs to be accomplished before an analyses of

comparative effects can proceed. Presenting these pre-experimental analyses is the principal objective of the "Pretest Results" section below. In pursuit of this objective much descriptive information about the various groups will be displayed. Before these results are discussed the instruments and procedures employed will be described.

V. INSTRUMENTS AND PROCEDURES

Each of the student groups described above was administered a series of instruments in a pretest-posttest design covering the 1973-1974 academic year. To date only the pretest package has been completed. In addition, the experimental groups have been administered various tests and surveys during the course of the year; these have occurred in several cycles. Results from the pretest package will be reported in the "Pretest Results" section below. Results from other measurement techniques will be reported in "Interim Formative Evaluation Results" section below. The "Interim Summative Evaluation Results" section will incorporate any results having summative implications.

Pretest-Posttest Instruments

The following instruments were included in the pretest-posttest design. They were administered to both experimental and control groups. Their primary use was intended to be in summative evaluation, although they have some formative utility.

1. Comprehenive Tests of Basic Skills (CTBS) - This instrument measures traditional academic skills. The Reading and Arithmetic subtests were used, yielding the following scores: Reading Vocabulary, Reading

Comprehension, Reading Total, Arithmetic Computation, Arithmetic Concepts, Arithmetic Applications and Arithmetic Total. The instrument has been well developed and documented, but is subject to the usual insensitivities of standardized instruments.

2. Career Maturity Inventory (CMI) - This instrument was designed to measure Career Attitude and a set of career competencies: Self Appraisal, Occupational Information, Goal Selection, Planning and Problem Solving. The Self-Appraisal subtest was not administered. This instrument has been well developed but not extensively researched and documented.

3. Assessment of Student Attitudes Questionnaire (ASA) - This instrument has been designed by RBS staff to measure attitudes toward several elements in the learning environment: Education in General, School Curriculum, School Resources, School Counseling, Learning. This instrument is still in the development stage, and extensive data are being gathered on its performance; technical reports are available.

4. Student Demographic Data Questionnaire (SDQ) - This instrument was constructed by the evaluation staffs of all Experience Based Career Education projects to provide common data on basic characteristics. This questionnaire includes: Name, Sex, Birth Date, Race, Grade Level, Post Secondary Plans, Parents Education Level, Parent Occupations, Sending School Grades and Sending School Attendance. Many items require one-time administration only; selected items will be administered in the posttest.

Other Instruments

Another series of instruments has been established for the purpose of assessing experimental students only. Although the results of these measures may have summative evaluation implication, no comparable control group data would be available to establish a comparative perspective. These instruments have all been developed by the evaluation staff. Their primary intended use was for formative evaluation; in some cases operational needs were also accomplished through the evaluation activities.

1. Employer Cluster Tests - These instruments are being designed as a series of tests of knowledge relevant to employer cluster learning activities. They are to be administered as pre-and posttests for each cluster (academic quarter). These instruments are currently in the development stage, and no empirical data are yet available. Results will have both summative and formative relevance.
2. Student Opinion Survey - This instrument is being developed as a common instrument by the evaluation staffs of the four Experience Based Career Education Programs. It is designed to measure student opinions concerning major program activities and objectives. The instrument is being subjected to extensive analysis for refinement purposes. It has been administered once, at mid-year, and further administrations are pending first results analysis.. The common instrument will be used both summatively and formatively.
3. Parent Opinion Survey - This is the parent counterpart to the Student Opinion Survey; the information above regarding administration and refinement is pertinent here also.

4. Employer Opinion Survey - This is the employer counterpart to the Student Opinion Survey; the information above regarding administration and refinement is pertinent here also.
5. Employer Checklist and Interview - This instrument has been developed to monitor employer recruitment, orientation and management. It is in the process of first administration and will be readministered near the end of the year.
6. Career Exploration Student Questionnaire - This instrument has been designed to gather basic student reactions to employer learning activities. It is administered during the last activity session, and results are quickly fedback to the employer staff.
7. Forms - The generic term is used to reference a fairly sophisticated set of basic data gathering procedures which have been developed and implemented by the evaluation staff. This evaluation activity has been detailed in Task Report 15A1. Develop Instructional Systems for Facilitating the Integration, Utilization and Communication of Learning Resources. These systems have been developed to maximize computer applications. The forms designed and implemented include:

    a. Student Needs and Interests Form
    b. Student Summary Sheets
    c. Learning Activities Descriptor Form
    d. Student Transcript
    e. Student Grade Report
    f. Weekly Attendance Report

Pretest - Posttest Procedure

Figure 1 displays the testing schedule employed this year. During October, 1973 the Comparison and Context groups were administered all of the above instruments in one session; whereas, the ACE and ACE-Olney students were given the CTBS/CMI in one session and the ASA/SDQ in another session. One time period (4 hours) was the only release-time arrangement possible for Olney students.

ACE and ACE-Olney students were tested on the CTBS and CMI during their orientation sessions before the opening of classes in September. The average data completeness for the CTBS was 91.45%; for the CMI it was 90.13%. Students missing during these scheduled sessions were eventually tested, but late scores have not been included in the analyses. ACE and ACE-Olney students were given the ASA and SDQ during their regularly scheduled Guidance Group Sessions after the school year had begun. The data completeness for the ASA was 82.00%; for the SDQ it varied widely by item but always exceeded 70.00%. The percentage of completeness warrants the assumption that these data represent the experimental groups in the Academy program.

Comparison and Context group students were tested in a special session at Olney High School. In all, 183 students (57 comparison and 126 context) were scheduled for testing. Of these, 149 were actually notified by their homeroom teachers. Of the 149 subjects who were selected and notified, 110 were in attendance for the testing session. This 26% absence rate indicates the possibility of a percentage nonrepresentativeness in the final sample attained. However, given the extremely short lead time for setting up the special testing session, and the lack of an overt reward for attending, the

Figure 1

Testing Schedule

Group \ Instrument	CTBS			CMI			ASA			SDQ
	Pre	Post	T	Pre	Post	T	Pre	Post	T	Pre
1. ACE	end* June	end* Feb	8	end* Aug	end* Feb	6	beg Oct	end* Feb	5	beg* Oct
2. ACE - Olney	end* Aug	mid Apr	8	end* Aug	mid Apr	8	beg* Oct	mid Apr	6	beg* Oct
3. Comparison	end* Oct	beg June	8	end* Oct	beg June	8	end* Oct	beg June	7	end* Oct
4. Context	end* Oct	beg June	8	end* Oct	beg June	8	end* Oct	beg June	7	end* Oct

Notes:

1. Instruments

   CTBS = Comprehensive Tests of Basic Skills
   CMI = Career Maturity Inventory
   ASA = Assessment of Student Attitudes Scale
   SDQ = Student Demographic Data Questionnaire

2. Groups

   ACE = 12th grade Academy students
   ACE - Olney = 10th and 11th grade Academy students, in cooperative program with Olney High School
   Comparison = 11th grade students who applied to Academy program, were accepted, but opted to not enroll
   Context = randomly selected 10th, 11th and 12th grade Olney High School students

3. All pretests were administered in 1973, posttests in 1974.

4. For each instrument the "T" column indicates time in months elapsed between pretest and posttest.

5. * indicates completed testing as of data of this report

74% attendance rate is rather remarkable. The data seem to allow a reasonable degree of generalization to the original randomly constituted sample. All instruments were administered in this special session. The data completeness for those students attending in most cases approached 100%.

It was possible to establish good rapport in the testing sessions for all groups. There was nothing to suggest systematic between group differences due either to the administration procedure or to the motivation to complete the test instruments. All testing was accomplished under standardized conditions by the evaluation staff.

As can be seen in Figure 1 the times available for test administration were not optimal. Experimental groups were pretested earlier than control groups, and instruments could not be administered as a package in every case. This was certainly not by design, but was reflective of the difficulties inherent in the testing of several hundred students on lengthy instruments whose scheduling required the joint planning of numerous agencies and individuals.

The first difficulty presented by the testing schedule is the possible non-comparability of pretest data between groups. This is important because establishing between group disparities on pretest dependent variable measures will determine the nature of the pretest-posttest gains analysis. The most serious element, the June testing for the ACE Group on the CTBS, was eliminated by an earlier decision to use last year's pretest data for the ACE Group CTBS analysis. The use of last year's data in this one case not only equates the groups for age at time of testing, but also sets up the analysis for one-year and two-year gains. In pretest-posttest analyses last year's and this year's data will be used to the fullest extent of their comparability. In the present analyses it is important to note that the ACE Group results for the CTBS only are derived from FY 1973 pretest data. This still leaves a one month discrepancy in favor of the controls between the experimental and control groups. Rather than incur the complexities and validity threats incumbent with score adjustments, this discrepancy has been accepted as a limitation.

The second concern is one of intertest interval. It is important that the time expiring between the pretest administration and posttest administra-

tion of an instrument be roughly equal across groups. This is to insure comparability of gains as a function of time. Figure 1 also displays the projected posttesting times which have been staggered to attempt equality of intertest intervals. Precise equality was not possible in all cases because pretest instruments were not always administered as a package, but posttest instruments will be so done. Scheduling priority was given to dependent measures in order of their perceived importance. Assuming a minimum of logistical impediments to implementing this schedule, analysis without serious limitations due to testing sequence should be possible.

Other Test Procedures

The pretest-posttest instruments have been treated more or less as a package. This section deals with instruments that function independently. Their form and procedure is often less formal and fixed; they are also in different stages of development. These instruments will thus be discussed individually.

Employer Cluster Tests. Delay in filling the instrument development staff position responsible for conducting this substantial effort in test construction has resulted in a revised implementation schedule. Knowledge tests for three clusters (Health, Manufacturing and Utilities) are planned for trial administration at the end of the sixth quarter. These tests will then be administered as pre- and posttests by the evaluation staff at employer sites during the third quarter. It is anticipated that other cluster tests can also be developed during the seventh and eighth quarters.

Student Opinion Survey. This has been administered at mid-year by the evaluation staff to students during their regularly scheduled Individualized Learning Center sessions. A year-end administration of the revised instrument is anticipated.

Parent Opinion Survey. This has been administered by direct mailing to parents. The response rate has been poor to date (about 40%). Efforts to retrieve more completed forms through individual followup are currently underway. A year-end administration is being considered.

Employer Opinion Survey. This is currently being administered through individual interviews of employer representatives by the evaluation staff. A year-end administration under the same conditions is planned.

Employer Checklist and Interview. This has been packaged with the Employer Opinion Survey.

Career Exploration Student Questionnaire. These are administered by the Counselor-Coordinators during the last session of each employer learning activitiy. This pattern will continue throughout the year.

Forms. The forms system involves submission of basic data on learning resources available and student progress each quarter. These constitute the foundation of the computer system. Explanation of the numerous procedures involved would be too cumbersome for the present report. For more discussion see Task Report 15A1.

Hypothesis Testing

As can be seen, the instrumentation and consequent data gathering are substantial as well as principal evalaution activities. These functions provide much descriptive information for feedback to employers, starf and others. They provide data useful in program development and management. Several of the products are of operational use or have some worth in public information and dissemination. But it is the final analysis which really counts. This is an analysis of program effects as determined by the testing of prespecified hypotheses. These have been stated above in the "Summative Evaluation Overview". Basically, principal student effects will be determined through rigouous statistical procedures employing the pretest-posttest package as a set of dependent variables. The independent variables will be alternatively entry level for gains analysis and type of program for comparative effects. Other analyses utilizing student characteristics will be conducted. Hypotheses relating to other effects do not have available structured statistical testing techniques. Rather the information from the summative package, other instruments, and observations will be presented and discussed to argue degrees of success or failure. A more exacting discussion of proposed analytic techniques may be found in Special Evaluation Report 3, "Revised Analysis Plan".

VI. PRETEST RESULTS

In this section results and conclusions derived form the pretesting session of the pretest-posttest package will be presented. Results from the other instruments and procedures described above will be presented in subsequent sections.

Table 1 presents several summary characteristics of the student groups involved in the FY 1974 program. At the start of the academic year both experimental groups (ACE and ACE-Olney) contained 76 students. The context group (randomly selected) was roughly equivalent with 81 students, while the other control group (the comparison students who had opted out of the program) was much smaller with only 28 students. The total number of subjects available for analysis was 261.

Table 1

Composition of Student Groups

Characteristics \ Groups	ACE	ACE-Olney	Comparison	Context	Total
1. Size	76	76	28	81	261
2. Average Age	17.0	15.8	16.3	16.3	16.4
3. Grade Level	12.0	10.5	11.0	11.0	11.2
4. Previous School % Attendance*	89.8	91.6	90.5	88.7	90.1
5. Previous School GPA **	3.5	3.0	3.3	3.4	3.3

ACE Group = Students originally recruited for FY 73 program, all equivalent of 12th graders, all in program for second year.

ACE-Olney Group = Students recruited for FY 74 program in cooperation with Olney High School, grade equivalent split between 10th and 11th graders, all in program for first year.

Comparison Group = Olney students who applied for ACE-Olney program, were accepted, but finally decided to not enroll.

Context Group = A random selection of equal numbers of 10th, 11th and 12th graders from Olney, no known exposure to program, no intended selection biases.

* Data completeness = 84%, scale 0% - 100%

** Data completeness = 96%, scale 1 = high to 5 = low

Age

In age, the ACE group was approximately one year older, on the average, than the other groups. Likewise in grade level, the ACE group was approximately one level higher than the others. The ACE group consisted entirely of 12th graders. The ACE-Olney group was about evenly divided between 10th and 11th graders. The Comparison group consisted entirely of 11th graders. The Context group was divided among the three levels.

Previous School Attendance

Reported previous school attendance was uniform across groups and high (90%). It seems likely that this figure has been subjected to error somewhere along the way, but it reflects school records as accurately as they could be analyzed.

Previous School GPA

Previous school grade point average (GPA) varied slightly across groups. On a 5 point scale with 5 being low, the ACE group averaged 3.5 (C-), the ACE-Olney group averaged 3.0 (C), and the controls fell roughly in between. This would indicate that the 12th grade experimentals have relatively poorer past school records than the 10th and 11th grade experimentals ($p < .05$). No other comparative differences were significant. Relationships to other measures and Academy performance remain to be drawn.

Race and Sex

With regard to sex and race, data were not gathered for the Context and Comparison groups. Table 2 presents figures for the ACE and ACE-Olney groups.

Table 2

Sex and Race Distributions

Group / Subgroup	ACE		ACE-Olney		Total	
	#	%	#	%	#	%
Male	34	49	36	56	70	52
Female	36	51	28	44	64	48
Black	47	67	52	81	99	74
White	23	33	12	19	35	26
Black Male	21	30	26	41	47	35
Black Female	26	37	26	41	52	39
White Male	13	19	10	15	23	17
White Female	10	14	2	3	12	9

The sex distribution was relatively equitable, although the ACE-Olney group had a disproportionately large number of males. The race distribution did not reflect equal representation; the percentage of Blacks in the 12th grade group was 67%, and in the 10th and 11th grade groups it was 81%. The total number of Whites recruited this year was very small (12). Subgroups overall ranked in order of size were: Black Females - 39%, Black Males - 35%, White Males - 17%, and White Females - 9%. It is apparent that the program is differentially attracting population subgroups; the factors involved in this phenomenon should be investigated.

Parental Occupations

Tables 3 and 4 present the distributions of parental occupations for the various groups. No major systematic differences between groups were observed. Preponderant categories for fathers were: Operative - 33%, Craftsman - 16% and

Table 3

Fathers' Occupations

in Percents

Occupations \ Groups	ACE	ACE-Olney	Comparison	Context	Total
1. Clerical	2.7	3.5	10.0	9.8	6.3
2. Craftsman	14.3	26.2	10.0	8.2	15.6
3. Farmer	0.0	0.0	0.0	0.0	0.0
4. Housewife	0.0	0 0	0.0	0.0	0.0
5. Laborer	20.4	12.3	5.0	8.2	12.5
6. Manager	11 1	1 8	0.0	9.8	5 8
7. Military	0.0	3.5	5.0	3.3	2.6
8. Operative	25.9	24.6	40.0	44.3	32.8
9. Professional	5.6	5.8	10.0	3.3	5.2
10. Proprietor	3.7	0.0	0.0	3.3	2.1
11. Protective	0.0	10.5	0.0	4.9	4.7
12. Sales	5.6	3.5	5.0	1.6	3.6
13. Service	3.7	5.3	15.0	3.3	5.2
14. Technical	5.6	3.5	0.0	0.0	2.6
Data Completeness	71.1	75.0	71.4	75.3	73.6

Table 4

Mothers' Occupations

in Percents

Occupations \ Groups	ACE	ACE-Olney	Comparison	Context	Total
1. Clerical	9.7	20.6	25.0	20.5	18.1
2. Craftsman	0.0	3.2	0.0	0.0	0.9
3. Farmer	1.6	0.0	0.0	0.0	0.4
4. Housewife	56.5	23.7	37.5	46.1	41.9
5. Laborer	1.6	1.6	0.0	0.0	0.9
6. Manager	0.0	0.0	0.0	1.3	0.4
7. Military	0.0	0.0	0.0	0.0	0.0
8. Operative	14.5	15.9	12.5	10.3	13.2
9. Professional	9.7	11.1	8.3	3.8	7.9
10. Proprietor	0.0	1.6	0.0	1.3	0.9
11. Protective	0.0	3.2	0.0	1.3	1.3
12. Sales	3.2	0.0	0.0	2.6	1.8
13. Service	3.2	17.5	16.7	11.5	11.4
14. Technical	0.0	1.6	0.0	1.3	0.9
Data Completeness	81.6	82.9	85.7	96.3	87.0

Laborer - 13%. The largest categories for mothers were: Housewife - 42%, Clerical - 18%, Operative - 13% and Services - 12%. For further analysis these occupational categories should be translated into a scale; at present they permit descriptive analysis only.

Parental Educational Levels

Tables 5 and 6 present the distributions of parental educational levels for the ACE and ACE-Olney groups. Most parents were reported to have completed some or all of secondary school. Since the levels have some scalar quality, a test for differences between the groups was made. The scale employed represented 8 educational levels from 1 = None to 8 = Advanced Degree. The average educational levels of the ACE group were 3.91 and 3.96 for fathers and mothers respectively; the ACE-Olney averages were 3.95 and 4.11. No group differences with regard to parental education were found to be significant.

Post Secondary Plans

All groups were questioned about their post secondary plans. Table 7 presents this information. The two experimental groups did not seem to differ markedly with approximately 25% planning to immediately enter a vocation, over 50% planning further education, and about 10% anticipating job training. The ACE-Olney group was relatively more interested in 4 year colleges within "further education" by a margin of 35% to 22%. Of note is the wide disparity between the experimental and control groups. In the case of the latter, for Comparison and Context groups respectively, fully 50% and 40% were planning immediate entry into a job, 42% and 48% were planning further education, and very few were anticipating anything else. From these distributions it

Table 5

Fathers' Educational Level

in Percents

Level \ Group	ACE	ACE-Olney	Comparison*	Context*	Total
1. None	0.0	1.8	-	-	0.9
2. Elementary	7.3	5.5	-	-	6.4
3. Some Secondary	36.4	21.8	-	-	29.1
4. Secondary Graduate	30.9	47.2	-	-	39.0
5. Some Post-Secondary	14.5	16.4	-	-	15.5
6. College Graduate	7.3	5.5	-	-	6.4
7. Some Graduate Study	1.8	0.0	-	-	0.9
8. Advanced Degree	1.8	1.8	-	-	1.8
Data Completeness	72.4	72.4	0.0	0.0	42.2

* This item was not included in comparison or context questionnaires due to possible negative reaction.

Table 6

Mothers' Educational Level

in Percents

Level \ Group	ACE	ACE-Olney	Comparison*	Context*	Total
1. None	0.0	0.0	-	-	0.0
2. Elementary	0.0	1.6	-	-	0.8
3. Some Secondary	29.5	22.6	-	-	26.0
4. Secondary Graduate	49.2	51.6	-	-	50.4
5. Some Post-Secondary	18.0	14.5	-	-	16.3
6. College Graduate	3.3	8.1	-	-	5.7
7. Some Graduate Study	0.0	0.0	-	-	0.0
8. Advanced Degree	0.0	0.0	-	-	0.0
Data Completeness	80.3	81.6	0.0	0.0	47.1

* This item was not included in comparison or context questionnaires due to possible negative reaction.

Table 7

Post Secondary Plans

in Percents

Category \ Group	ACE	ACE-Olney	Comparison	Context	Total
1. Employment	19.4	17.6	50.0	39.2	28.3
2. Job Training	10.4	8.1	4.2	7.2	8.1
3. Military	7.5	6.5	0.0	4.3	5.4
4. Homemaker	0.0	0.0	0.0	0.0	0.0
5. Vocational School	14.9	8.1	4.2	7.3	9.5
6. 2 year academic college	13.4	6.5	4.2	1.4	6.8
7. 2 year vocational college	3.0	8.1	4.2	0.0	3.5
8. 4 year college	22.4	35.4	29.0	39.2	32.0
9. Part-time work	7.5	6.5	0.0	0.0	4.1
10. Other	1.5	3.2	4.2	1.4	2.3
Data Completeness	88.2	81.6	85.7	85.2	85.1

seems that, while all groups have a high incidence of planned post secondary education, the remaining control students are more interested in immediate employment than the remaining experimental subjects. The plans of ACE and ACE-Olney students were more evenly spread over the categories available (possibly indicating more diversity of interest); the Comparison and Context distributions were bimodal within the employment and further education categories.

Reasons for Academy Enrollment

Regarding reasons for Academy enrollment (Table 8), the opportunity for Career Exploration was the largest single factor for both ACE and ACE-Olney students. Individualized instruction, choice of courses, smaller classes and the opportunity to move around the city were also indicated by a substantial number of students.

Table 8

Reason for Academy Enrollment

in Percents

Category \ Group	ACE	ACE-Olney	Total
1. Smaller Classes	11.7	10.7	11.2
2. Career Exploration	30.0	51.8	40.6
3. Choice of Courses	8.3	12.5	10.3
4. Opportunity to Move Around City	11.7	8.9	10.3
5. Individualized Instruction	23.3	8.9	16.4
6. Make New Friends	0.0	1.8	0.9
7. Other	15.0	5.4	10.3
Data Completeness	78.9	73.7	76.3

Career Maturity Inventory

Tables 9 through 13 present the results of the Career Maturity Inventory pretests. In all cases percentiles were used for analysis purposes; thus grade level differences have been taken into account. Each subtest table consists of three subdivisions. The first presents basic descriptive data on each group; the groups are arranged in order of the magnitude of their mean score. The second is an analysis of variance table which indicates the degree of statistical reliability with which the largest mean can be considered different from the smallest mean. The third section indicates the statistical significance of the remaining mean differences. In all cases the numbering of means reflects the order presented in the first section of the table.

Inspection of these results allows some interesting conclusions:

1. In no case was the Comparison Group different from the Context Group (control groups)

2. In no case was the ACE Group different from the ACE-Olney Group (experimental groups)

3. In most cases both experimental groups were superior to both control groups

These findings indicated no differences between first year (ACE) and second year (ACE-Olney) students on career maturity factors as measured by the CMI. These findings also showed no differences between students who applied, were accepted, but dropped from the program (Comparison) and a random selection of students (Context). However, both of these groups were consistently lower than the experimental groups. This suggests that at least one consistent difference between students who stay in the program and other

Table 9

Career Maturity Inventory Pretest
Attitude Scale Percentiles

Groups	N	Mean	SD	Mean Diff.
1. ACF	67	40.55	26.05	-
2. ACF - Olney	70	39.81	27.90	0.74
3 Comparison	28	26.93	25.57	13.62
4. Context	77	26.39	23.56	14.16

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	11086.79	3	3695.60	5.55
Within Groups	158365.32	238	665.40	
Totals	169452 12	241	Confidence Level of F (3,238) = 99 89%	

Tukey Test
for Differences Between Means

Mean Diff	1	2	3
4	14 16 *	13.42 *	0.54
3	13.62 *	12.88	Critical Value = 13.21
2	0.74		* p < .05

Table 10

Career Maturity Inventory Pretest

Occupational Information Subtest Percentiles

Groups	N	Mean	SD	Mean Diff.
1 ACF - Olney	69	50.16	27 28	-
2 ACF	62	46 57	25 47	3.59
3 Context	76	29.67	21.16	20.49
4. Comparison	26	28.62	24.80	21.54

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	21268.45	3	7089 48	11.67
Within Groups	139103.42	229	607.44	
Totals	160371 87	232	Confidence Level of F (3,229) = 99.99%	

Tukey Test
for Differences Between Means

Mean Diff.	1	2	3
4	21.54 *	17.95 *	1.05
3	20.49 *	16.90 *	Critical Value = 12.95
2	3.59		* p < .05

Table 11

Career Maturity Inventory Pretest

Goal Selection Subtest Percentiles

Groups	N	Mean	SD	Mean Diff.
1 ACE - Olney	70	39 80	18.80	-
2 ACE	66	39.58	20.41	0.22
3. Comparison	26	25.39	20.28	14.41
4 Context	69	23 78	16.18	16.02

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	14116.48	3	4705.49	13.43
Within Groups	79551.24	227	350.45	
Totals	93667.72	230	Confidence Level of F (3,227) = 99 99%	

Tukey Test
for Differences Between Means

Mean Diff.	1	2	3
4	16.02 *	15.80 *	1.61
3	14.41 *	14.19 *	Critical Value = 9.89
2	0 22		* p < .05

Table 12

Career Maturity Inventory Pretest

Planning Subtest Percentiles

Groups	N	Mean	SD	Mean Diff.
1. ACE	65	44.97	24.39	-
2. ACE - Olney	70	44.90	21.04	0.07
3 Comparison	22	33.32	21.60	11.65
4. Context	56	27.57	17.79	17.40

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	12771.19	3	4257.06	9.22
Within Groups	96450.73	209	461.49	
Totals	109221.92	212	Confidence Level of F (3,209) = 99.99%	

Tukey Test
for Differences Between Means

Mean Diff.	1	2	3
4	17.40 *	17.33 *	5.75
3	11.65	11.58	Critical Value = 12.00
2	0.07		* p < .05

Table 13

Career Maturity Inventory Pretest
Problem Solving Subtest Percentiles

Groups	N	Mean	SD	Mean Diff.
1. ACE - Olney	70	49.77	21.61	-
2. ACE	66	44.29	21.61	5.48
3. Comparison	21	28.57	22.63	21.20
4. Context	53	28.32	21.31	21.45

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	17813.89	3	5937.96	12.76
Within Groups	95884.56	206	465.46	
Totals	113698.46	209	Confidence Level of F (3,206) = 99.99%	

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	21.45 *	15.97 *	0.25
3	21.20 *	15.72 *	Critical Value = 12.25
2	5.48		

* p. < .05

students their age is a higher evidenced career maturity. This must be a factor at work in the recruitment and selection process, and merits further study. In percentile categories the control subjects were generally close to the lowest quartile while experimental subjects were close to the middle.

Comprehensive Tests of Basic Skills

Tables 14 through 20 present the results from the Comprehensive Tests of Basic Skills in the same format used above for the Career Maturity Inventory. The Reading and Arithmetic subtests were administered. Since scale scores were available for this instrument, they were used for analysis purposes to increase discrimination and accuracy. Grade equivalents are reported in the text for descriptive purposes. Since scale scores do not equate for age, the ACE group's pretest scores for last year were employed in this analysis.

The statistical procedures demonstrated no significant differences between groups on the Arithmetic subtests. However, on each of the Reading subtests the ACE group was significantly superior to the Comparison group. The implications of this single comparative difference are not easy to draw, but it seems clear that the ACE students upon entrance to 11th grade were better in reading skills than the students who applied but dropped one year later. The lack of other significant differences would suggest that any other group comparisons relating to basic skills could assume an initial equality of group achievement.

Grade equivalent averages for each group are presented in Table 21. As can be seen, most groups were functioning at the 7th or 8th grade level on the average. Arithmetic scores were generally lower than Reading scores. All groups ranged on all measures from a low of the 3rd grade level to a high of the 12th grade level. From these low scores it is apparent that basic skills improvement is a priority need for these students.

Table 14

CTBS Pretest

Reading Vocabulary Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	70	574.20	78.72	-
2. Context	81	551.57	96.71	22.63
3. ACE - Olney	73	554.58	79.94	29.62
4. Comparison	28	529.46	73.36	44.74

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	52283.06	3	17427.69	2.43
Within Groups	1781231.88	248	7182.39	
Totals	1833514.94	251	Confidence Level of F (3,248) = 93.39%	

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	44.74 *	22.11	15.12
3	29.62	6.99	Critical Value = 42.89
2	22.63		* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences; all other scores are 1973-1974

Table 15

CTBS Pretest

Reading Comprehension Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	70	563.06	89.46	-
2. ACE - Olney	73	539.88	79.78	23.18
3. Context	81	522.33	90.00	40.73
4 Comparison	28	512.00	95.05	51.06

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	82971.75	3	27657.25	3.61
Within Groups	1902567.66	248	7671.64	
Totals	1985539.41	251	Confidence Level of F (3,248) = 98.60%	

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	51.05 *	27.88	10.33
3	40.73	17.55	Critical Value = 44.31
2	23.18		* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences; all other scores are 1973-1974.

Table 16

CTBS Pretest

Reading Total Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	70	568.06	87.53	-
2. ACE - Olney	73	539.21	78.27	28 85
3. Context	81	536.25	87.58	31.81
4. Comparison	28	517.75	83.41	50.31

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	66349.66	3	22116.55	3.10
Within Groups	1771246 00	248	7142 12	
Totals	1837595.66	251		

Confidence Level of F (3,248) = 97.25%

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	50.31 *	21 46	18.50
3	31 81 *	2 96	
2	28 85		

Critical Value = 42 76

* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974

Table 17

CTBS Pretest

Arithmetic Computation Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	71	511 97	74.51	-
2 Comparison	28	510 57	80 08	1 40
3 Context	80	502 14	93 99	9.83
4 ACE - Olney	73	496 81	71 93	15 16

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	9751.48	3	3250 49	0 49
Within Groups	1632147.60	248	6581.24	
Totals	1641899.08	251		

N.S

Confidence Level of F (3,242) = Not Computed

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	15.16	13.76	5.33
3	9 83	8.42	
2	1 40		

N.S

Critical Value = 41.03

* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974

Table 18

CTBS Pretest

Arithmetic Concepts Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	71	531.97	80.25	-
2. Comparison	28	531.25	76.17	0.72
3 Context	80	514.83	84.77	17.14
4. ACE - Olney	73	513.66	79.61	18.31

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	18469.68	3	6156.56	0.94
Within Groups	1631467.18	248	6578.50	
Totals	1649936.86	251		

N.S

Confidence Level of F (3,248) = Not Computed

Tukey Test
for Difference Between Means

Mean Diff	1	2	3
4	18.31	17.59	1.17
3	17 14	16.42	
2	0.72		

N.S.

Critical Value = 41.03

* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974

Table 19

CTBS Pretest

Arithmetic Applications Scale Scores

Groups	N	Mean	SD	Mean Diff.
1 ACE[1]	71	523 27	87.65	-
2. ACE - Olney	72	517.03	92.89	6.24
3 Context	80	509 14	85 80	14 13
4. Comparison	28	481 57	112.51	41.70

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	37388.66	3	12462.89	1.48
Within Groups	2073692.20	247	8395.52	
Totals	2111080.86	250		

N.S.

Confidence Level of F (3,247) = 78.07%

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	41.70	35.46	27.57
3	14 13	7' 89	
2	6.24		

N.S

Critical Value = 46.40

* p. < .05

[1]1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974.

Table 20

CTBS Pretest

Arithmetic Total Scale Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE[1]	71	517.06	77.04	-
2. Comparison	28	504.54	74.08	12.52
3. Context	80	503.38	94.81	13.68
4. ACE - Olney	72	498.36	76.63	18.70

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	32303.42	3	10767.51	1.08
Within Groups	2467073.27	247	9988.15	
Totals	2499376.69	250		

N.S.

Confidence Level of F (3,247) = Not Computed

Tukey Test for Difference Between Means

Mean Diff.	1	2	3
4	18.70	6.13	5.02
3	13.68	1.16	
2	12.52		

N.S

Critical Value = 43.80

* $p. < .05$

[1] 1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974.

Table 21

CTBS Pretest

Reading and Arithmetic Mean Grade Equivalents

Test \ Group	ACE[1]	ACE-Olney	Comparison	Context	Total
Reading					
Vocabulary	9.2	8.5	7.9	8.6	8.7
Comprehension	8.7	8.1	7.1	7.5	8.0
Total	8.8	8.3	7.5	8.3	8.4
Arithmetic					
Computation	7.8	7.4	7.6	7.5	7.6
Concepts	8.3	7.7	7.9	8.0	8.0
Application	7.8	7.5	8.4	7.5	7.6
Total	7.9	7.4	7.5	7.4	7.6

[1] 1972-1973 pretest scores used for this group to equate for age differences, all other scores are 1973-1974

Assessment of Student Attitudes Survey

The Assessment of Student Attitudes Scale is a measure which is currently being given much developmental attention by the evaluation staff. It is included in this section because it is a part of the pretest-posttest package aimed primarily at summative evaluation.

The Assessment of Student Attitudes Scale was designed specifically to measure student attitudinal dimensions in several areas central to the instructional process. These areas have been designated as subtests with separate scores as follows:

1. Education in General
2. Program Curriculum
3. School Facilities
4. Program Counseling
5. Learning in General

The instrument is intended to measure student attitude toward the school program with reference to each of the areas listed above. The instrument is generalized in content and phraseology to be applicable in public schools as well as alternative or experimental programs. Extensive reliability, validity and discrimination value studies are currently being undertaken.

Tables 22 through 27 present the results from pretest analyses of each ASA subtest. The tables have been formatted in the same manner as those reported above for the Career Maturity Inventory and the Comprehensive Tests of Basic Skills. Data are reported as raw scores reduced to a mean on a scale from 1 (low) to 5 (high). As can be seen from these results, only one difference between groups was found to be significant; that was between

Table 22

ASA Pretest

Education Subtest Raw Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE	56	3.49	.55	-
2. ACE - Olney	52	3.46	.64	03
3. Comparison	28	3.42	.83	.07
4. Context	80	3.41	.64	.08

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	2555.84	3	851.95	0.20
Within Groups	887698.15	212	4187.26	
Totals	890253.98	215		

N.S.

Confidance Level of F (3,212) = Not Computed

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	.08	.05	.01
3	.07	.04	
2	.03		

N.S.

Critical Value = 0.35

* p. < .05

Table 23

ASA Pretest

Program Curriculum Subtest Raw Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE	56	3.48	.60	-
2. Comparison	28	3 46	.68	.02
3. Context	80	3.41	.59	.07
4. ACE - Olney	52	3.31	.61	.17

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	8638.54	3	2879.51	0.77
Within Groups	792636.11	212	3738.85	
Totals	801274.65	215		

N.S

Confidence Level of F (3,212) - Not Computed

Tukey Test
for Difference Between Means

Mean Diff	1	2	3
4	.17	.15	.10
3	.07	.05	
2	02		

N.S.

Critical Value = 0.33

* p. < .05

Table 24

ASA Pretest

Program Resources Subtest Raw Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE	56	3.64	.63	-
2 Context	80	3.36	.59	.28
3. Comparison	28	3.32	.74	.32
4 ACE - Olney	52	3.25	67	.39

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	46690.93	3	15563.64	3.78
Within Groups	873276.61	212	4119 23	
Totals	919967.54	215		

Confidence Level of F (3,212) = 98.86%

Tukey Test
for Difference Between Means

Mean Diff	1	2	3
4	.39 *	.11	.07
3	.32	.04	
2	.28		

Critical Value = 0.34

* p. < .05

Table 25

ASA Pretest

Program Counseling Subtest Raw Scores

Groups	N	Mean	SD	Mean Diff.
1 ACE	56	3.24	88	-
2. Context	80	3.00	83	.24
3 ACE - Olney	52	2.86	91	38
4. Comparison	28	2.86	.88	.38

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	47223.23	3	15741.08	2.09
Within Groups	1597083 73	212	7533.41	
Total	1644306.96	215		

N.S.

Confidence Level of F (3,212) = 89.74%

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	.38	.14	.00
3	.38	.14	
2	.24		

N.S.

Critical Value = 0.46

* p. < .05

Table 26

ASA Pretest

Learning Subtest Raw Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE	56	3.69	.63	-
2. ACE - Olney	51	3.66	.63	.03
3. Comparison	28	3.63	.73	.06
4. Context	80	3.63	.67	.06

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	1727.09	3	575.70	0.13
Within Groups	910245.40	211	4313.96	
Totals	911972.49	214		

N.S

Confidence Level of F (3,211) = Not Computed

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	.06	.03	.00
3	.06	.03	
2	.03		

N.S.

Critical Value = 0.35

* p. < .05

Table 27

ASA Pretest

Total Raw Scores

Groups	N	Mean	SD	Mean Diff.
1. ACE	56	3.51	.49	-
2. Context	80	3.36	.53	.15
3. Comparison	28	3.34	.64	.17
4. ACE - Olney	52	3.29	.54	.22

Analysis of Variance

	Sum of Squares	df	Mean Square	F
Between Groups	14652.05	3	4884.02	1.71
Within Groups	606434.72	212	2860.54	
Totals	621086.77	215		

N S

Confidence Level of F (3,212) = 83.35%

Tukey Test
for Difference Between Means

Mean Diff.	1	2	3
4	.22	.07	.05
3	.17	.02	
2	.15		

N.S.

Critical Value = .35

* p. < .05

the ACE and ACE-Olney groups on the Attitude Toward Program Resources Subtest. All groups were found to be not different on all other subtest measures. It is apparent that all student groups are similar with regard to attitude toward school as measured by the RBS-designed Assessment of Student Attitude Scale.

Summary

This section has presented information on characteristics of students attending the Academy for Career Education. There were two groups of students attending programs at the Academy: the ACE group and the ACE-Olney group. The ACE group were 12th grade students who received their full high school experience at the Academy; the ACE-Olney group were 10th and 11th grade students who participated only in the core Academy program. Two additional groups of students were selected for the purpose of comparing the progress of Academy students with students in traditional high school programs. These two groups were selected from the student body at Olney High School; the groups were a Comparison group and a Context group. The Comparison group was composed of 11th grade students who applied for and were accepted for the Academy program but declined to enroll in the program. The Context group was composed of a random selection of equal numbers of 10th, 11th, and 12th grade students.

Four instruments were administered to the four groups of students. The instruments were the Student Demographic Data Questionnaire (SDQ), the Comprehensive Tests of Basic Skills (CTBS), the Career Maturity Inventory (CMI), and the Assessment of Student Attitudes Scale (ASA).

the control groups were Occupational Information, Goal Selection, and Problem Solving. The two other subtests of the CMI, Attitude Scale and Planning, presented inconclusive results with the ACE group superior to the Comparison group on one and the ACE and ACE-Olney groups superior to only the Context group on the other. The significant differences on the three scales seem to be a factor in students' decisions to participate in the Academy program and warrant further investigation.

The Comprehensive Tests of Basic Skills (CTBS) were also administered to all experimental and control groups. No significant differences between groups were demonstrated on the Arithmetic subtests. On each of the Reading subtests, the ACE group was significantly different only from the Comparison group; while it seems clear that the ACE students upon entrance to 11th grade were superior in reading skills to students who applied and dropped, implications of this single comparison are difficult to draw. Other group comparisons support the contention that the experimental and control groups are equal in achievement on other basic skills.

The Assessment of Student Attitudes Survey (ASA) was administered to all groups and revealed no differences between the groups in their attitudes toward education, program curriculum, program counseling, or learning. The only difference between groups was between the ACE and ACE-Olney groups in their attitude toward program resources; the ACE students appear to be more positive in their attitude toward program resources. This difference may be attributed to the greater length of time the ACE group has been enrolled in the experimental program.

The experimental and control groups were equal on many of the instruments administered. On the CTBS, all groups were statistically similar with the

The Student Demographic Data Questionnaire (SDQ) provided information regarding the background characteristics of Academy students and their counterparts in the control groups. The students selected seem to be representative of an urban population. There appeared to be no between-group differences for previous school attendance or for parental occupation. Between-group differences were found for previous grade point averages (GPA) of the groups, post secondary plans of the groups and the racial and sexual compositions of the groups. The ACE students had a GPA of C-, the ACE-Olney group had a GPA of C, and the control groups averaged in between the two experimental groups. All four groups showed a high level of interest in post secondary education. Sex and racial data were collected only for the Academy groups. The control group students were more interested in immediate post secondary employment than were the experimental groups; the experimental groups also showed a greater diversity in the post secondary planning than did the control groups. The ACE group was approximately evenly divided between Males and Females; 70% of the ACE group was Black and 30% was White. The ACE-Olney group was 55% Male and 45% Female; 80% of this group was Black and 20% was White. The Academy program seems to be attracting significantly more Blacks than Whites. If this trend continues the Academy program will have served members only of one population sub-group. The uneven racial composition should be studied further.

The Career Maturity Inventory (CMI) was administered to all experimental and control groups. Three subtests of the CMI revealed distinct differences between the experimental and control groups. The subtests on which the ACE and ACE-Olney groups were equal to one another and significantly superior to

exception that the ACE group was superior to the Comparison group on Reading subtests. The ASA results indicated that all groups were similar with the exception that the ACE group was superior to the ACE-Olney group on the Attitude Toward Program Resources subscale.

The CMI and background characteristics obtained from the SDQ did reveal some intergroup differences that warrant further study. The ACE and ACE-Olney groups were superior to both control groups on most subtests of the CMI. And the program seems to be differentially attracting Black and White students with Blacks forming a large majority of the students. Thus, both career maturity and race seem to be factors which differentiate between students who display interest and enroll from those who display interest and don't enroll in the Academy programs. Reasons for these differences necessitate further study.

VII. COMMON INSTRUMENT RESULTS

Four instruments have been developed in a cooperative effort among the evaluation staffs of the Experience Based Career Education (EBCE) Programs and the evaluation representative of NIE's Career Education Program staff. Three of these instruments, Student, Parent and Employer Opinion Surveys have been developed to investigate program effects. The fourth, a Program Administrator Questionnaire is mainly a structured format for collecting information descriptive of project conduct. All common instruments have as their basic objective the consistent collection of useful information across projects. The goal of this activity is to maximize the research utilization of the Career Education Programs. The four instruments have all been developed, but each is in a different stage of implementation as described below.

Program Administrator Questionnaire

This instrument has just reached the final stages of design and has not been administered in time for inclusion of results in the present report.

Employer Opinion Survey

This instrument is currently being administered by the evaluation staff. Since last year's experience demonstrated that mailed questionnaires of this type were hard to retrieve, the administration is being done by personal interview. This process could not be completed for inclusion in the present report.

Parent Opinion Survey

This instrument was mailed to parents with stamped, self-addressed return envelopes. The response to date has not been encouraging (about 40%), but follow-up procedures are underway. No results were available for analysis in the present report.

Student Opinion Survey

This instrument was administered to all students during their Individualized Learning Center sessions the week of January 21, 1974. The data completeness averaged about 85%. The items from the survey have been divided into subsections which will serve to organize the presentation of results.

Opinions of Program. This section includes Questions 1-10, 21 and 23-29; all of these items are scored on a scale from 1 = low to 5 = high. In items 1-10 and 21-24 the scalar extremes were "Definitely NO" to "Definitely YES";

for 25-29 they were "Poor" to "Excellent". Table 28 presents the results from these items. It is apparent that student opinions were fairly high with a substantial range across items. Items that were particularly high (Overall Mean $\geq$ 3.99) concerned general appeal and interest value of the program, the opportunity to progress at one's own rate and the learning experiences. Items that were relatively low (Overall Mean $\leq$ 2.99) were all "time choice" questions: student don't feel that they have much choice in determining the amount of time spent in various activities. This finding is reasonable since the duration of activities is fairly fixed. The choice of which activities one enters is open, and this is reflected by the much higher mean (3.49) when students were asked if they had enough choice in selecting the types of employer/resource sites visited. Of interest is the fact that in each item the ACE Group had relatively lower opinions than the ACE-Olney Group. The overall mean difference for these items was 3.90 vs. 3.32 for ACE-Olney and ACE respectively. It would appear that the twelfth graders' general opinion of the program was substantially lower than the tenth and eleventh graders' at the time of testing.

Vocational Attitude. This brief section includes Questions 11-15, all of which were rated on the "Definitely NO" to "Definitely YES" scale. Again 1 = low and 5 = high. The results are presented in Table 29. Scores were generally high, but two of the items were low ($\leq$ 3.54) for this group of questions. Students did not appear to think that most people get much satisfaction from their work. They also were relatively down on money as a motivator. Interpretation of these findings involves value judgements. In most cases the ACE-Olney scores were again higher than the ACE figures.

Table 28

Student Opinion Survey Pretest

Opinion of Program

Item	n	Total Mean	ACE Mean	ACE-Olney Mean
1. Have you liked attending the Career Education Program?	113	3.99	3.88	4.11
2. If you had it to do over again, do you think you would decide to participate in the Career Education Program?	112	3.50	3.12	3.92
3. Have the activities available in the Career Education Program been interesting to you?	113	4.02	3.64	4.43
4. In the Career Education Program have you felt that you could progress at your own rate?	112	4.37	4.05	4.70
5. Have you seen much of a relationship between your activities in the learning center and the careers you have learned about?	112	3.29	3.03	3.56
6. Do you get enough feedback about how well you are doing in the program?	112	3.17	2.88	3.48
7. Have you had enough choice in deciding the amount of time you spend at employer sites?	109	2.67	2.39	2.96
8. Have you had enough choice in deciding the amount of time you spend in learning academic subjects?	111	2.99	2.88	3.11
9. Have you had enough choice in deciding what you do at employer/resource sites?	112	2.77	2.52	3.04
10. Have you had enough choice in selecting the types of employer/resource sites you visit?	111	3.49	3.23	3.76
21. Through your experiences in the Career Education Program have you learned a lot about opportunities for the future?	112	4.26	4.10	4.43
23. Would you say the Career Education Program has helped you form career plans?	110	3.89	3.71	4.07
24. Would you say you've learned a lot while attending the Career Education Program?	111	4.04	3.84	4.24
25. How well organized and coordinated do you think the Career Education Program has been?	111	3.40	3.02	3.80
26. How would you rate the general quality of the Career Education Program staff?	112	3.90	3.62	4.20
27. How would you rate the personal counseling available in the Career Education Program?	110	3.65	3.21	4.13
28. How would you rate the career counseling available in the Career Education Program?	111	3.68	3.19	4.19
29. How would you rate the general quality of the Career Education Program employer/resources you've worked with?	112	3.75	3.50	4.02
Averages	111.44	3.50	3.32	3.90

Means on scale from 1 = low to 5 = high

Table 29

Student Opinion Survey Pretest

Vocational Attitude

Item	n	Total Mean	ACE Mean	ACE-Olney Mean
11. Do most people receive much satisfaction from their work?	108	3.54	3.55	3.53
12. Do you think that if a person works hard enough, he can achieve anything?	111	4.41	4.26	4.56
13. Do you think that the main reason a person works is to earn enough money to live?	111	3.39	3.14	3.65
14. In general, are you looking forward to working in a job?	112	4.50	4.31	4.70
15. Do you think you have much choice of occupations?	112	4.15	4.00	4.31
Averages	110.8	4.00	3.85	4.15

Means on scale from 1=low to 5=high

Opinions of Employer/Resources. This section included Questions 16-20, all of which were again rated on the "Definitely NO" to "Definitely YES" scale. The results are presented in Table 30. Student opinion was again generally high. Student sense of welcome at employer sites was especially good (≥ 4.00). One area, feedback from employers to students, was very low (≤ 3.00). In each case ACE-Olney mean scores were higher than ACE Group scores.

Table 30

Student Opinion Survey Pretest

Opinions of Employer/Resources

Item	n	Total Mean	ACE Mean	ACE-Olney Mean
16. In general, were the employer/resource personnel involved in the Career Education Program aware of your needs and interests?	112	3.35	3.19	3.52
17. In general, at employer/resource sites did you get to actually do things, rather than just listen?	111	3.23	2.97	3.51
18. In general, have the employer/resource sites you've visited been interested in the Career Education Program?	111	3.76	3.47	4.08
19. In general, have you felt welcome at the employer/resource sites?	110	4.00	3.77	4.24
20. Do most of the employer/resource sites you have worked with let you know how you're progressing?	110	2.55	2.40	2.71
Averages	110.8	3.41	3.16	3.61

Means on scale from 1.= low to 5 = high

Reasons for Entering the Career Education Program. This section was comprised of a single, multiple part item. Each part represented a projected reason for entering and asked for a rating on the 1 to 5 scale from "Not at All Important" to "Extremely Important". The results are presented in Table 31. Two of the projected reasons were accorded a very high (≥ 4.00) importance; they were wanting to learn about careers and prepare for a job. Two others were rated low in importance (≤ 3.00); they were boredom with school and anticipation of an easy time in Career Education. No notable between group differences were observed.

Table 31

Student Opinion Survey Pretest

Reasons for Entering the Career Education Program

Item	n	Total Mean	ACE Mean	ACE-Olney Mean
30. How important was each of the following factors in deciding to join the Career Education Program?				
a. I wanted more freedom/ independence	112	3.52	3.50	3.54
b. I wanted to choose my own learning style	111	3.79	3.95	3.62
c. I wanted to learn about careers	112	4.29	4.19	4.41
d. I didn't like my previous school	112	3.13	3.41	2.81
e. I wanted to prepare for a job	112	4.13	4.00	4.28
f. I was bored with school	111	2.87	2.98	2.75
g. I heard the Career Education Program was easy	111	2.05	2.00	2.11
h. Other (specify)	29	3.90	4.40	3.63
Averages	101.3	3.46	3.55	3.39

Means on scale from 1=low to 5=high

Opinion Comparative to Traditional Schools. This section included only three items, Questions 31-33. They were again on a five point scale, but the poles were "Much Less" to "Much More". The results are presented in Table 32. Scores on these items were extremely high (≥ 3.97) evidencing

Table 32

Student Opinion Survey Pretest

Opinion Comparative to Traditional Schools

Item	n	Total Mean	ACE Mean	ACE-Olney Mean
31. In comparison with regular schools, how much opportunity did the Career Education Program provide you for learning about occupations?	113	4.50	4.29	4.74
32. In comparison with regular schools, how much opportunity did the Career Education Program provide you for general learning?	113	3.97	3.76	4.20
33. In comparison with past experiences in regular schools, how motivated are you to learn in the Career Education Program?	112	3.99	3.69	4.31
Averages	112.7	4.15	3.91	4.42

Means on scale from 1-low to 5=high

a strong satisfaction with the Career Education Program when compared with regular school programs. Learning about occupations was especially high (4.50). Again the ACE-Olney scores were more favorable in each case.

Omnibus Question. This section of the instrument consisted of a single item with sixteen subparts. The item asks for a rating on the importance of various types of learning, then a second rating on how successful the Career Education Program has been in effecting the learning. All ratings were given on a 1 = low to 5 = high scale. For rating importance the poles were "Not Important" to "Highly Important". For rating program effectiveness the poles were "Not Effective" to "Highly Effective". Results are reported in Table 33. Students viewed everything to be fairly important. All mean scores were high, with an overall mean of 4.33 and a small range of 3.94 to 4.62.

Table 33

Student Opinion Survey Pretest

Omnibus Question

Item: Below are listed some areas of possible importance for a student to learn. Please rate each in terms of how important you feel it is for a student to learn, and how well you feel the program is accomplishing each.

Subparts	Importance			Effectiveness		
Students learn to:	Total Mean	ACE Mean	ACE-Olney Mean	Total Mean	ACE Mean	ACE-Olney Mean
a. Perform specific occupational skills	4.18	3.97	4.32	3.61	3.11	3.89
b. Be punctual and organize their time	4.31	4.27	4.33	3.65	3.20	3.89
c. Assume responsibility for themselves	4.52	4.53	4.52	3.92	3.56	4.10
d. Make decisions and follow through	4.33	4.38	4.29	3.82	3.25	4.10
e. Communicate with others in a mature way	4.54	4.63	4.48	3.71	3.16	3.98
f. Be aware of more career opportunities	4.52	4.52	4.53	4.37	3.96	4.51
g. Work with others	4.35	4.09	4.52	4.04	3.68	4.22
h. Evaluate their own work	3.94	4.00	3.90	3.73	3.68	3.77
i. Perform basic academic skills	4.18	4.36	4.06	3.74	3.39	3.98
j. Think through and solve problems	4.42	4.34	4.47	3.64	3.16	3.88
k. Have a positive attitude toward self	4.51	4.22	4.69	3.91	3.52	4.10
l. Have a positive attitude toward work	4.37	4.22	4.47	3.71	3.40	3.87
m. Have a positive attitude toward learning	4.62	4.50	4.69	3.96	3.32	4.30
n. Prepare for further education	4.24	3.94	4.42	3.85	3.36	4.10
o. Improve interpersonal and social skills	4.05	4.19	3.96	3.66	3.29	3.86
p. Other (please specify)_____	4.17	4.25	4.13	4.00	3.67	4.17
Averages	4.33	4.28	4.36	3.83	3.41	4.04

Mean on scale from 1=low to 5=high

The lowest items were "improve interpersonal and social skills" and "evaluate their own work". ACE and ACE-Olney ratings did not differ markedly regarding importance. Regarding program effectiveness the results were quite different. All mean ratings were lower than for importance, with the overall mean 3.83 for effectiveness vs. 4.33 for importance. In rating effectiveness the ACE Group was again consistently less favorable than the ACE-Olney group in their evaluation. Although no score was especially low, only two scores exceeded 4.00: "work with others" and "be aware of more career opportunities".

Other Items. Several other items were included in the instrument. Results are presented in Table 34. As can be seen from these responses most students are planning to complete high school. There did not seem to be a strong difference between the ACE and ACE-Olney Groups. Most students did not have jobs during the school year. Many more ACE than ACE-Olney students reported employment, often accounting for a substantial number of hours per week. Very few students in either group reported any employment interfering with any other activities.

Table 34

Student Opinion Survey Pretest

Other Items

Items:

22. Do you plan to get a secondary school diploma?

Response	% Total	% ACE	% ACE-Olney
1. Definitely No	8.3	8.8	7.7
2.	4.6	5.3	3.8
3.	22.9	24.6	21.2
4.	21.1	22.8	19.2
5. Definitely Yes	43.1	38.6	48.1

34. During this school year have you worked outside of home for money?

Response	% Total	% ACE	% ACE-Olney
1. No	62.2	51.7	73.6
2. Yes, less than 10 hours a week	7.2	3.4	11.3
3. Yes, between 10 and 20 hours a week	14.4	20.7	7.5
4. Yes, between 20 and 30 hours a week	5.4	5.2	5.7
5. Yes, more than 30 hours a week	10.8	19.0	1.9

35. If you have an outside job, does it interfere with anything listed below?

Response	% Total	% ACE	% ACE-Olney
1. I don't have an outside job	65.9	54.3	78.6
2. My job doesn't interfere with any other activities	19.3	26.1	11.9
3. It interferes with my school work	2.3	2.2	2.4
4. It interferes with my social life	6.8	10.9	2.4
5. It interferes with my extracurricular activities	5.7	6.5	4.8

Summary

Summary of the four common instruments designed for utilization at the EBCE sites, only the Student Opinion Survey had been administered in time for analysis and inclusion in the present report. Results from the other instruments will be reported in Special Reports, Task Reports and the Final Report. In general, students rated the Career Education Program highly with particular emphasis on the program's interest value, individualization and opportunity for learning. The more structured nature of the RBS program was reflected in students' lower ratings of ability to determine the amount of time spent in activities. The fact that these ratings were not extremely low, and that other perceptions were very favorable, would suggest that this is not a serious concern. It may not even be a criticism, but rather a simple statement of fact. It should be pursued to conclusion just in case a problem is there. Students evidenced a high vocational attitude, especially regarding their anticipation of employment. Most students seemed to think that gaining knowledge about careers and jobs was the most important reason for entering the Career Education Program. Students were strongly favorable toward the Career Education Program, in comparison with traditional school programs. When presented with a series of learning objectives, students thought all of them were important. Interpersonal and social skills and self evaluation were considered the least important. The ratings of program success in achieving the objectives were not as high as the rated importance of the objectives. The difference was fairly consistent, but difficult to interpret because the Zero Point for importance and effectiveness may not be the same. For each objective the ACE Group ratings of effectiveness were lower than the ratings accorded by the ACE-Olney group. This was consistent with the other results obtained; thus it would seem that twelfth graders had a generally less favorable attitude toward the program than tenth and eleventh graders. Most students planned to get

a high school diploma. Only a minority were working during the school term, but some ACE Group students were working a substantial number of hours per week. Very few students replied that their vocational activities interfered with any of their other activities.

VIII. INTERIM SUMMATIVE EVALUATION RESULTS

This section of the report has been reserved for specifically summative results. Of the summative documents listed above in the "Summative Evaluation Overview", reports have been completed on the Management and Support Systems Components. The present report will review the results of these summative documents. In addition, the results from the pretest-posttest administration for seniors have recently become available. A preliminary analysis of these results will be presented. These results must all be regarded as tentative since the experimental year is still in progress. Extensive summative data and conclusions will be presented in the final report after all the information has been collected and analyzed.

Management Systems Components

The area of management systems was defined as containing the following components:

1. Policy Determination
2. Institutional Relationships
3. Program Administration
4. Planning and Formative Evaluation
5. Community Relationships

These components were reported upon to the extent allowed by the data available in Summative Report 1, "Report on Management Systems Components." Conclusions from this report will be discussed briefly below. Priorities stated for each area are from the Operating Plans for FY 1974.

Policy Determination. This function falls mainly to the Board of Directors of the Academy for Career Education. For most of this year the Board has been constituted of seventeen representatives including employers (11) educational agencies (4), community (3) and labor (2). The following priorities were established for the current year:

1. Continue refinement and maintenance of an effective policy-making group, the Academy Board.
2. Increase the policy involvement of individual employers.
3. Increase labor union representation on the Academy Board.
4. Increase student and parent participation on the Board.
5. Systematize codification and dissemination of Academy policies.

To date, each of these priorities except the last has occasioned successful developments within the Policy Determination Component. The desirability of the last priority has come into question in terms of such systematization promoting institutional rigidity and creating a mountain of red tape. The issue is currently under discussion, and it is likely that a more flexible and informal way to attain clarity of policies will be sought. Progress in student and parent participation in Board activities has been somewhat slow due to the lack of organization in student and parent advisory groups. It is felt that student and parent Board members can be considered representative of their constituencies only if they are recommended by organized advisory

groups. Development in this area thus awaits the development of advisory groups. Progress in other areas has been according to plan. The Board has continued this year to be a committed, active, constructive and critical group.

Institutional Relationships. The Career Education Program must maintain relationships with the Pennsylvania Department of Education, the Greater Philadelphia Chamber of Commerce and the Philadelphia School District. The success of these relationships determines the success with which the instructional program may be conveyed to students. The following priorities have been established for the current year:

1. Establish a cooperative relationship between the Academy and the Philadelphia School District.
2. Maintain the private academic school license.
3. Establish a cooperative relationship between the Chamber of Commerce and the Philadelphia School District.

The Academy (and CEP) has been able to establish effective institutional relationships with each of the agencies necessary for conducting the program and preparing for replication. The third priority, which calls for promoting a relationship between two outside agencies, has not met with great success to date. The effort is still in process; thus any conclusions must be regarded as preliminary. Otherwise, this area has proceeded very well. The relationship with the State is substantially perfunctory, but does require a continuing effort. Relationships with the school district have required extensive effort and resources. This investment seems to be paying off in terms of district cooperation and the development of good working interrelations.

Program Administration. The RBS Career Education Program Director is responsible for the performance of the EBCE contract. His conduct of the program occurs within the framework of policy set both by the Academy Board of Directors and the RBS Board of Directors. He serves simultaneously as the Academy's Executive Director and the Career Education Program Director. His position is responsible for supervision of all staff, program events and management decision-making. The following priorities have been established for the current year.

1. Maintain a balance between centralization and decentralization, i.e., centralization of certain functions such as submission of reports to NIE and decentralization of others, such as budget control within components and decision-making on the component level.
2. Manage the involvement of the Chamber of Commerce and the Philadelphia School District.
3. Establish a system for tracking and projecting operational costs.
4. Increase the quality and decrease the quantity of reporting to NIE.
5. Reduce external demands on project resources.

Each of these priorities has been approached and fairly well met. Centralization of products has been achieved with the Program Director serving as the monitoring and coordinating resource. Supervisory staff in Career Development, Career Guidance, Basic Skills, Replication, Evaluation and Administration have been accorded a high degree of autonomy in fiscal and other decision-making within their areas. Management of relations with the school district has been conducted by the Public School Liaison Officer, a staff member, with

input from the Program Director. Management of relations with the Chamber of Commerce has been accomplished by the Career Development and Career Guidance Team Leaders with input from the Program Director. The latter relations have not been as satisfactory as the former, with some difficulties cited by all parties involved. A new cost tracking system has been developed and instituted by the Program Director. This system includes seven major cost centers: Program Administration, Evaluation, Replication, Career Development, Career Guidance, Basic Skills and Supplementary Program. Within each are cost subcenters which focus on various areas of development and operations. After each cost has been attributed to a use by cost center, it is categorized substantively. This is done by assignation from a chart of accounts containing approximately fifty categories ranging from Books and Subscriptions to Salaries and Wages. This cost system seems to be efficient and informative. Concerning report quantity, as of this date last year, a total of 964 pages of formal task report had been submitted to NIE in the form of 6 documents each averaging some 161 pages. To date this year, only 534 pages of formal task report have been submitted to NIE. These were in the form of 16 individual reports averaging 33 pages each. This represents a quantity reduction of 45%. Evidence is thus available that the quantity of reporting has in fact been significantly reduced this project year compared with last project year. The reduction in bulk per se has made the reports more useful to project staff and presumably to NIE and external reviewers. In addition, the reports have been of a generally higher quality. The increased quality and decreased quantity seem to have resulted in reports which have been clearer, more consise and more useful. External demands which require resources are usually exerted on experimental and demonstration projects. These can range from simple inquiries to extensive

requests for information or services. The project management has been sensitive to these external demands and tried to allow inclusion only of those directly relevant to parts of the task scope.

Planning and Formative Evaluation. This component is concerned with developing evaluative information which is useful in program management and planning. Its activities are a joint function of the evaluation and administration staffs. The following priorities were established for the current year:

1. Establish extrinsic standards for comparison of Academy students with "traditional" high school students.
2. Develop a basic information system aimed at the compilation of complete and consistent program data.
3. Develop a system for cost analysis.
4. Develop a reporting system focused on evaluation usability including assessment of actual uses.

These priorities, except the last, have been pursued virtually to completion. Determining the use of evaluation data is a task still under development. This remains a priority for the second half of the year, the time when most of evaluation reports will be produced. In the other areas, extrinsic standards have been provided by the establishment of the student populations discussed above. These student groups will allow a comparative analysis of program effects. An extensive data system has been developed and implemented this year by the evaluation staff. It is under further development, but at present is productively functional. The cost tracking system outlined above will enable fairly precise and detailed eval-

uative cost analyses. The first attempt at this is presented in the "Formative Evaluation Results" section below.

Community Relations. This has not been a priority area in the program. Little publicity has been sought in the past; parents have been the only group whose support and interest has been sought. New importance is added by the prospect of replication sites, and efforts are now targeted in this direction. This component is the responsibility of administrative and replications staff. The following priorities have been established for the current year:

1. Provide a better definition and analysis of the constituent publics in order to effectively deliver replication specifications.
2. Improve and expand the relationships with the Philadelphia School District, Chamber of Commerce, participating employers, parents and students so that the program can continue in the future.

The first priority is presently being pursued through proposed replications studies, the activities of the replications task force, the activities of the Replications Advisory Group and written products of the replications staff. The area is still a developing one and conclusions would be premature. The second priority has been discussed above with regard to the Chamber of Commerce and School District. Parent meetings have been held again this year with improved attendance and interest. Student government is still struggling for establishment; interest seems to be confined. Employer involvement is still strong. Some problems in coordination and support have been suggested by the results of employer interviews, but full results are not yet available. Overall, the support of individuals and institutions involved in the program has been more than sufficient to enable its continuation.

Support Systems Components

The area of support systems was defined as containing the following components:

1. Staffing
2. Students
3. Logistics
4. Supplementary Program

These components were reported upon to the extent allowed by the data available in Summative Report 2, "Report on Support Systems Components." Conclusions from this report will be discussed briefly below. Priorities stated for each area are from the Operating Plans for FY 1974.

Staffing. This component is concerned with the provision of staff adequate to perform the workscope of the Career Education Program. The selection and supervision of staff are the responsibility of the Program Director and the unit head in each area. The professional staff presently numbers 32, distributed as follows:

1. Program Administration	-	3
2. Evaluation	-	4
3. Development	-	10
4. Operations	-	12*
5. Replication	-	3
TOTAL		32

* 8 of these are Chamber of Commerce staff under subcontract to RBS.

The following priorities were established for the current year:

1. Enhance articulation between development and operations.
2. Enhance articulation across teams and components.
3. Respond to the demands of the workscope.
4. Meet training needs.

An undesirable polarization of the staff into operational and developmental contingents last year resulted in an effort this year to unify and integrate. A major structural change in this direction was the reorganization of staff into content-referenced units (e.g., Career Development, Basic Skills, etc.) rather than function-referenced units (i.e., development and operations). This new arrangement has resulted in observable improvement in staff inter-relationships, but the onset of the Chamber of Commerce subcontract has introduced some problems. The Chamber staff is distinct from the program staff in terms of physical location and program function. Articulation and communication has become a problem in some areas. It has been attempted to overcome these problems through weekly team meetings between program and Chamber staff, weekly program cabinet meetings which include the director of the Chamber staff, and individual contact.

Articulation across teams and components has been greatly enhanced this year. The cabinet, which has been expanded to include representatives from each team, meets weekly to discuss issues, development and plans. The task reports, which are more concise and readable, are distributed to all staff in a timely fashion. There are weekly staff meetings of each team. There are periodic full-staff meetings, retreats and other occasions which allow dissemination of information and interaction. These resources are available; the actual extent of their effect has not been ascertained. The demands of the workscope have been well met.

The task schedule is current; and the intentions of the operating plans have been realized. Meeting training needs has presented some problems. The difficulty has been largely confined to the Chamber staff, which is the only newly staffed unit. The difficulty arises from the fact that last-minute contract approval did not allow sufficient time for either recruiting or training this staff. Thus, training has extended over the operational year. Training in other areas has been adequate.

Students. This component is concerned with providing students to participate in the Academy program. The responsibility for recruiting students has rested largely with the Administrative Head of the Academy, the Public School Liaison Officer, the Career Guidance Team Leader, and the Career Development Team Leader; other project staff have also been involved in the effort. At the end of the first quarter of this academic year, 147 students were enrolled in the Academy program. The following priorities were established for the current year:

1. Obtain and retain a cross-section of students.
2. Relate student selection criteria to student performance.
3. Attract and interest a large number of applicants.
4. Promote student understanding of the program.

Since the student populations have been extensively treated in sections above, the present discussion will be brief. Two other evaluation reports may be consulted for additonal information: Special Report 1, "Student Recruitment and Selection," and Special Report 2, "Student Characteristics". A fairly good cross-section of students was derived from last year's and this year's recruiting efforts. Scores on all measures exhibit wide ranges with the relatively low means characteristic of present urban

populations. The 6% rate of attrition over the course of the first quarter indicates good holding power, since initial drops are usually heavy. No past or presently measured student characteristics have been found to relate to student performance in the program. This could mean that there are no predictors, or that we aren't measuring them, or that we aren't detecting effects. Resolution of the questions involved should be possible after the posttest data have been collected and analyzed. During recruitment, a total of 426 students expressed interest in the program. Of these, 361 actually applied for entrance to the program. These large numbers of students indicate substantial interest in the Academy, especially when the short time available for publicity and recruitment is considered. The time frame also hindered the student orientation process. Level of program understanding was not measured.

Logistics. This component is concerned with the activities necessary to support the instructional systems including: facilities, transportation, health/safety, insurance, business management, instructional materials, supplies and equipment. These matters are principally the responsibility of the Program Director and other staff with administrative responsibility. The following priorities were established for the current year:

1. Maintain responsiveness to logistical problems.
2. Maximize procedural efficiency.
3. Maximize procedural effectiveness.

No major problems of note have occurred in the handling of logistical issues. One area which was the subject of much complaint last year, Academy facilities, was greatly improved this year by reallocating space.

Supplementary Program. The Supplementary Program is charged with the responsibility of providing twelfth graders with courses, in addition to the core program, to meet credit requirements and pursue their individual interests. The Supplementary Program is managed by a team leader and operated by a program coordinator. Since formal priorities and decision-making criteria were not stated in the operating plans, an informal review will be presented here. This program unit has provided approximately 30 different learning activities each quarter. The activities offered included physical education, health, science, psychology, music, journalism and driver training. The instructors included RBS staff, commercial agencies, employers and members of the community. The Supplementary Program remains a viable and attractive facet of the Academy program. A wide variety of activities are offered, and the program is favorably rated by both students and instructors. The program continues to be highly individualized and capable of meeting required credit needs and the interests of students. It is planned to incorporate some elements of this program into the core program next year.

Pretest-Posttest Data

Twelfth grade students were posttested near the end of February. That time was selected in order to equate for inter-test intervals among groups and to assure testing of the seniors planning to graduate in March. The early testing introduces a bias against experimental subjects since the period of instruction affecting gains was only 5 months (approximately September 20, 1973-February 20, 1974). The statistical importance of this bias is not yet resolved; the appropriateness of comparisons between this experimental group (city-wide) and the control groups (Olney-only) is still under inquiry. At any rate the data are herein presented for descriptive purposes only. Results

must be considered tentative since the analyses possible in the time available were not complete in scope. The results from the Comprehensive Tests of Basic Skills (CTBS) were selected for emphasis because they purport to represent crucial areas of cognitive development. Other analyses will be presented in later reports.

Table 35 displays the CTBS results in grade equivalent form. Students who had scheduled Individualized Learning Center (ILC) sessions were analyzed separately from those who were not in the ILC. This was done in an attempt to isolate ILC effects on basic skills development. For students with ILC activities grade equivalent gains over the five month period ranged from .3 of a year to 1 full year on the various subtests, with an average gain of .6 of a year. Reading Comprehension and Arithmetic Applications were most favorably affected; Arithmetic Computation and Concepts were least favorably affected.

For students without ILC activities the results were quite different. No change or regression of scores was usually the case. Results ranged from a loss of 1.1 years to a gain of 1.3 years on the various subtests, with an average loss of .3 of a year. Reading Vocabulary was most negatively affected and Arithmetic Applications was most positively affected.

Table 36 displays the same results computed in scale scores. These scores were used for statistical analysis of the reliability of observed gains. Statistical tests for correlated data pairs yielded the T values shown. The * indicates change scores which may be accepted as reliable at the 95% level of confidence. For the students with ILC activities all gains but Reading Vocabulary were significant. For the students without ILC activities two losses, Reading Vocabulary and Arithmetic Concepts, were found to be significant. The

Table 35

12th Grade CTBS Gains in Grade Equivalent

Students With ILC

Subtest \ Statistic	n	Pretest Mean	Posttest Mean	Mean Gain
Reading				
Vocabulary	55	9.2	9.7	+0.5
Comprehension	55	8.2	9.2	+1.0
Total	55	8.7	9.5	+0.8
Arithmetic				
Computation	56	8.1	8.4	+0.3
Concepts	54	8.0	8.3	+0.3
Applications	54	6.7	7.7	+1.0
Total	53	8.1	8.3	+0.3

Students Without ILC

Subtest \ Statistic	n	Pretest Mean	Posttest Mean	Mean Gain
Reading				
Vocabulary	12	13.6	12.5	-1.1
Comprehension	12	13.6	13.6	0.0
Total	12	13.6	13.6	0.0
Arithmetic				
Computation	10	11.9	11.3	-0.6
Concepts	10	11.7	11.1	-0.6
Applications	10	10.3	11.6	+1.3
Total	10	12.2	11.4	-0.8

Table 36

12th Grade CTBS Gains in Scale Scores

Students With ILC

Statistic / Subtest	n	Pretest Mean	Posttest Mean	Mean Gain	T_2 Value
Reading					
Vocabulary	55	570.67	581.02	+10.35	1.56
Comprehension	55	549.56	574.65	+25.09	3.05*
Total	55	557.53	578.13	+20.60	3.12*
Arithmetic					
Computation	56	524.25	534.22	+ 9.97	2.35*
Concepts	54	521.94	533.04	+11.10	2.19*
Applications	55	503.19	532.80	+29.61	3.95*
Total	53	514.02	531.85	+17.83	3.13*

Students Without ILC

Statistic / Subtest	n	Pretest Mean	Posttest Mean	Mean Gain	T_2 Value
Reading					
Vocabulary	12	709.83	678.67	-31.60	2.55*
Comprehension	12	675.50	701.50	+26.0	1.36
Total	12	698.50	701.17	+ 2.67	0.18
Arithmetic					
Computation	10	635.50	618.80	-16.70	0.87
Concepts	10	636.80	627.20	- 9.60	2.28*
Applications	10	605.00	639.90	+34.9	02
Total	10	633.30	629.20	- 4.10	0.57

1. Result of participation in program for 5 instructional months, October - February.
2. Statistical reliability of pretest-posttest difference, *$p < .05$ when $T \geq 2.01$ and df=50, $p < .05$ when $T \geq 2.23$ and df=10.

other change scores were not statistically reliable at the stated level.

From these results it may be concluded that the gains in basic skills observed among 12th grade students were substantial. They exceeded national normative expectations and farther exceeded the average gains among urban populations. The results indicated, as last year, Reading resources are apparently stronger than Arithmetic. The lowest area last year, Arithmetic Applications, seems to have been remedied, but the other Arithmetic areas need work.

Applying the results of students who did not have ILC activities is more tenuous due to the small number of students involved. The preponderance of unfavorable gains does indicate that the ILC is fostering much development in basic skills. In addition to the small numbers of students, the possibilities of ceiling effect blur the interpretability of these results. Further study at a more detailed level needs to be done of this phenomenon. The later availability of tenth and eleventh grade data may shed some light on the issue.

The Career Maturity Inventory (CMI) was also administered. Results indicated no significant gains on any of the subtests. The CMI is currently under study, and later reports on the instrument's validity will be issued.

The Assessment of Student Attitude Scale (ASA) was also administered. This instrument is still under development, and it was not possible in the time available to accomplish the necessary pretest-posttest conversions in time for the present report.

Summary

This section has presented summative results on the Management Systems Components, Support Systems Components and pretest-posttest data on twelfth graders. Summative data at this time in the experimental year must be considered tentative. Extensive analyses were not possible given the limited data available. Discussion of Management and Support systems was based largely on separate reports previously submitted for those areas. Pretest-posttest results represented preliminary data on twelfth graders only. In Management Systems the following positive trends were noted:

1. continuing development of a strong and useful Academy Board of Directors
2. continuing licensure of the Academy
3. extensive development of relationship with the Philadelphia School District
4. less centralization of project management
5. development of a cost tracking system and approaches to cost analysis
6. improvement in reporting system to NIE.
7. establishment of student comparison groups
8. development of new information system

The following problem areas were also discussed:

1. extent of policy codification necessary
2. management of relations with the Chamber of Commerce
3. development of a reporting system focused on evaluation usability

Each of the areas listed in the operating plans as priorities was discussed.

In Support Systems the following positive developments were noted:

1. maintenance of adequate staffing for workscope
2. provision of better resources for articulation across teams and components
3. recruitment of a large and diverse student body for this year
4. maintenance of efficient logistical systems
5. continuation of effective Supplementary Program

The following problem areas were also encountered:

1. articulation between program staff and Chamber of Commerce staff
2. needed improvement in training efforts

More information on these issues may be found in Summative Reports 1 and 2.

Analyses of the pretest-posttest results of the Comprehensive Tests of Basic Skills for twelfth grade students showed significant gains in most areas of reading and arithmetic. The average gain was .6 of a year over a 5 month instructional period. Students who were not involved in Individualized Learning Center activities did not fare well on these tests; in fact, an average loss was observed. The implications of these findings require further study. These results must be regarded as tentative since only a subgroup of students were tested and no control group data are available.

IX. INTERIM FORMATIVE EVALUATION RESULTS.

The Formative Evaluation section of the Interim Evaluation Report deals with analysis and evaluation of aspects of the Career Education Program which are specific to the Research for Better Schools' implementation of such a program. Briefly, this report describes the program, the recruitment and selection of students and employers, the use of support systems and advisors,

the instructional services provided to students, and the cost of providing those services.

Description of Program

The Research for Better Schools' Career Education Program consists of four components which provide the learning experiences for Academy students participating in the program. The four components are: the Career Development Unit; the Career Guidance Unit, the Basic Skills Unit, and the Supplementary Program. A brief description of each unit and its objectives follows:

The Career Development Unit is designed to promote academic growth and aid each student in developing a rational, reality-tested career plan which he could use to guide and shape career decisions in the future. There are two components of the Career Development Unit: Career Exploration and Career Specialization. Career Exploration encourages each student to identify potential career interests, and Career Specialization allows each student to extend learning experiences into a specific area.

Career Exploration is a series of structured explorations of the world of work conducted in employer settings; these explorations allow the student to identify potential career interests. The objectives of Career Exploration are to be able to classify careers into groups based upon various sets of criteria; to know the general rights and responsibilities of workers; to understand the impact of the work experience on one's life and the need for making a meaningful career choice; to be able to deal with the concepts, tools, and practices of business which have an impact on the individual as a worker, consumer, and citizen; to be able to identify and demonstrate

general work related academic proficiencies and general job acquisition and maintenance skills; and to be able to apply the decision-making process to the selection of one career area for in-depth analysis.

To accomplish the objectives of Career Exploration, the Career Development Unit has organized sixteen groups or "clusters" of similar experience sites. From one to five experience sites have been used for each cluster. Clusters that are available to the students are apparel, art, chemistry, communications, construction, education, finance, government, health, labor, manufacturing, marketing, personal services, research, transportation, and utilities.

Career Specialization encourages each student to extend his learning experiences into a specific area by participation in structured, individualized, and career-specific experiences conducted in employer settings. There is an internship and residency aspect to the Career Specialization component. The objectives of the internship experience are to know the specific skills, abilities, and academic proficiencies required in the career area; to be able to develop a plan for obtaining the required skills, abilities, and proficiencies; to identify and acquire the entry-level employability skills required; to be able to identify both the lateral and vertical avenues for growth and development common to the career area; to be able to demonstrate beginning skill competency in at least one of the functional skills common to the career area; and to apply the decision-making process to the personal identification of a tentative life career. The objectives of the residency experience are to extend beginning skill competency in order to be able to demonstrate some specified level of achievement in the skills and proficiencies common to the tentatively selected occupation; to develop self-awareness and self-confidence in the occupation; and to develop a personal plan and calendar

reference system for achieving identified career goals. The Career Specialization programs utilize many of the cluster experience sites for the internships and residencies.

The second of the four components of the Career Education Program is the Career Guidance Unit. The Career Guidance Unit provides Guidance Groups for all students and one-to-one counseling between a student and his counselor-coordinator. It also supervises Life Skills Specializations. The objective of the Guidance Group is to identify and clarify individual values, to promote interactive, planning, problem-solving and decision-making skills. The objective of the one-to-one counseling is to extend the student's self-concept and self-direction through interaction and experientially oriented feedback with the counselor-coordinator. The objective of the Life Skills Specializations is to define and relate Academy experiences in terms of academic achievement, career planning and training, and evolving life style through in-depth contribution to a social service community agency.

The third component of the Career Education Program is the Basic Skills Unit. The overall objective of the Basic Skills Unit is to improve the proficiency of students in communication arts and mathematical skills. More specifically, the Basic Skills Unit has been designed to assure that each student attains at least a ninth grade proficiency, as measured by standardized tests, in communication and mathematical skills. An individualized learning format is used by the Basic Skills Unit to achieve these objectives. Part of the curriculum material used is the Individualized Learning for Adults (ILA) program which is carefully sequenced and structured. The mathematics material is comprised of eight levels and five areas; there are 282 behavioral objectives for the mathematics area of the ILA materials. The communication arts material is comprised of eleven levels and ten areas, and

has 129 behavioral objectives. The Basic Skills Unit also offers students who have demonstrated a ninth grade proficiency in general mathematics and communication arts the opportunity to participate in other instructional programs which permit the student to meet graduation requirements and expand personal interests. The nature of these additional instructional activities is either in the form of structured experiences or independent study.

The fourth component of the Career Education Program is the Supplementary Program. This aspect of the career education program is offered only to twelfth graders; the sending school, Olney High School, provides the supplementary program for 10th and 11th grade students. The objectives of the Supplementary Program are to provide activities which are necessary to meet state requirements for graduation but which are not offered elsewhere in the program and to provide activities which reflect student interests and career plans. The objectives of the required activities are to develop activities to meet state requirements in physical education, to develop activities to meet state requirements in health, and to provide options for earning world culture credit. The objectives of the elective supplementary activities are to provide a variety of learning activities which meet state graduation requirements for elective credit, to provide learning activities in which career-related skills could be acquired, and to provide learning activities which meet student interests. To realize the objectives of the Supplementary Unit, 11 required activities in physical education, health, and world cultures and 18 elective activities such as Spanish, music, typing, psychology, journalism, driver training, and community development have been offered. The nature of the elective activities offered was determined from the results of a questionnaire polling students on the type of activities they desired.

The Career Education Program provides a comprehensive program of exploration of and specialization in careers, which are coupled with guidance and academic activities to promote and facilitate a more fully informed and reasoned entry into an adult world.

Support Systems: Staff and Facilities

This part of the "Formative Evaluation Results" will describe the staff and facilities used in the implementation of the RBS Career Education Program (see Summative Report 2, "Report on Support Systems Components", February 28, 1974).

There are currently 32 full-time professional staff members working on the Research for Better Schools' Experience-Based Career Education Program. These staff members are distributed among the program components in the following manner:

Program Administration	3
Evaluation	4
Design and Development	13
Replication	3
Career Development Unit	4
Career Guidance Unit	3
Basic Skills Unit	2
Supplementary Unit	1

Operations 12

Career Guidance/Career Development Units 8

Basic Skills Unit 2

Supplementary Unit 1

Administration 1

A Table of Organization for Research for Better Schools Career Education Program is presented in Figure 2.

The FY 1974 Operating Plans stated the following decision-making criteria for judging the effectiveness of the staffing component:

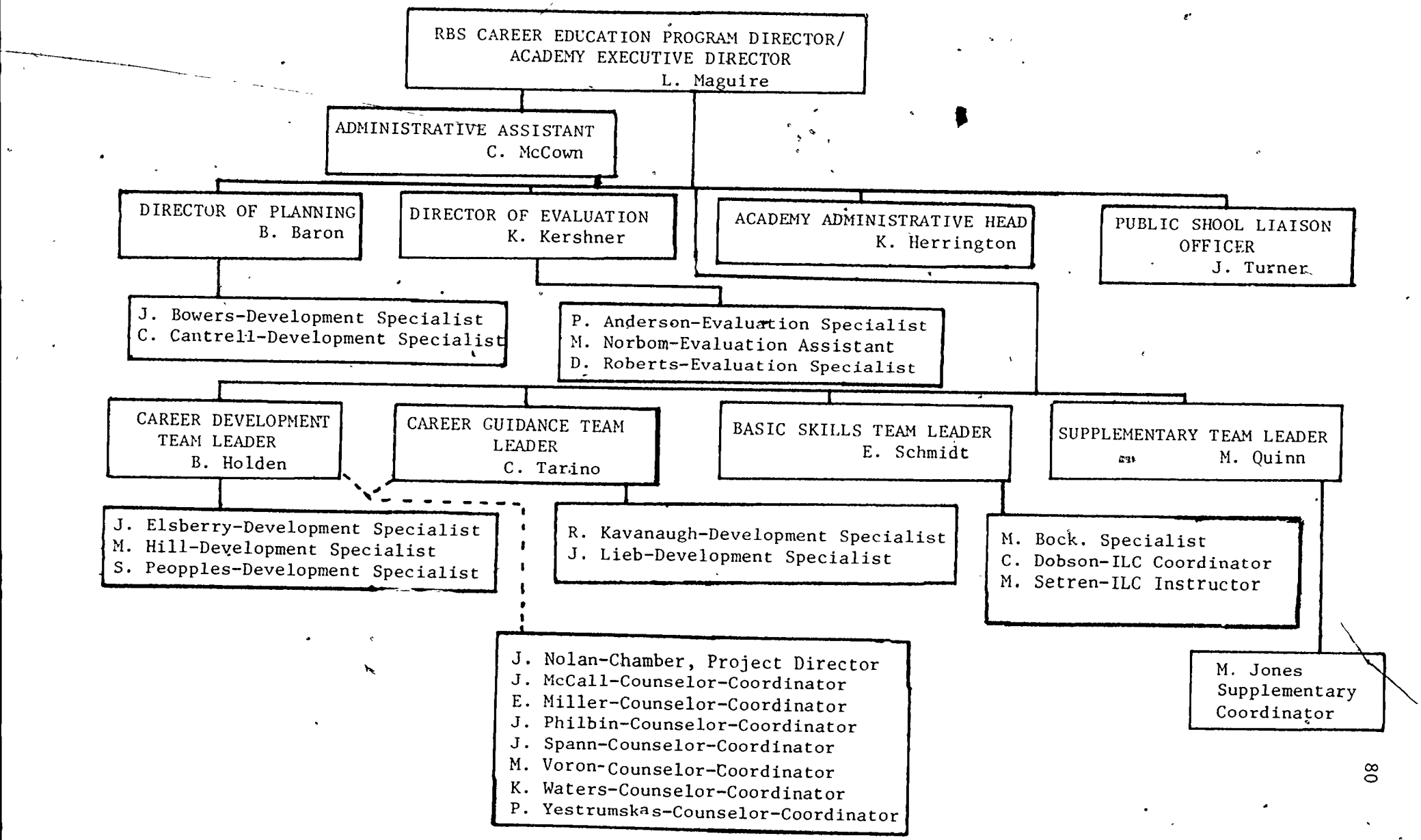
1. Degree of articulation between development and operations.
2. Degree of articulation across teams and components.
3. Ability of staffing pattern to respond to the demands of the task.
4. Ability to meet training needs.

Each of these criteria will be applied below to the operationalized staffing component:

In FY 1973, the level of articulation and communication between the operational and developmental staffs was judged unsatisfactory. This situation was seen as the result of a de jure and de facto separation of the two staffs in terms of physical proximity and lines of accountability. The operational staff was accountable to the Administrative Head of the Academy, while the

FIGURE 2

ORGANIZATIONAL CHART



developmental staff was accountable to the Director of Planning. Currently, the operational and developmental staffs of each program unit are accountable to that unit's team leader. This new organizational scheme has led to an acknowledged improvement in all of the four units. Articulation and communication remains a problem, however, in Career Guidance and Career Development. This problem is seen as a function of the complex relationships between RBS and the Chamber of Commerce. These relationships involve the RBS Program Director, the Chamber Project Director, the Chamber President, the Career Guidance and Career Development Team Leaders, and the staffs of both organizations. Establishing efficient working relationships has been a continuing task.

Articulation and communication across teams and components are promoted by the following:

1. weekly team meetings in which the operational and developmental staffs of each unit meet to discuss problems, perceptions, etc. having to do with their Unit;
2. weekly cabinet meetings in which the RBS Career Education Program Director meets with key project members to discuss the ongoing developments in the program;
3. full staff meetings to apprise staff members of new developments in the program which might affect them directly;
4. task reports which are distributed to the entire staff by the RBS Career Education Program Director; and
5. occasional retreats intended to educate staff about new project directions and to make policy decisions in concert with appropriate members of cooperating agencies.

It is believed that there is substantive and substantial articulation across teams and components as a result of the mechanisms which have been established.

Nineteen tasks were scheduled for completion by the Career Education Program staff by February 28, 1974. Another eighteen tasks were considered but eliminated from the scope of the project by the mutual consent of the National Institute of Education and the Director of the Research for Better Schools Career Education Program. Of the nineteen tasks scheduled for completion, eighteen were completed in the time frame set by the operating plan, and one was delayed. It is evident in view of these data that the current staffing pattern is well able to respond to the demands of the tasks stipulated by the contract with the National Institute of Education.

The major problem concerning the training needs of the program seemed to be centered around the lack of available training time prior to the commencement of FY 74 operations. The fact that the contract with the National Institute of Education was not finalized until August 31, 1973 rendered training programs for new staff less than adequate. This, coupled with the complexity of the Counselor-Coordinator role, resulted in an atmosphere of uncertainty in the Career Guidance and Career Development Units. Training needs in the other program components have been met satisfactorily.

The facilities used in the present program embrace four major sites. First, the Academy site at Broad and Locust Streets serves as a central instructional location and provides office space for the instructional staff of the Basic Skills Unit. Second, the RBS offices at 17th and Market Streets house some of the project staff and provide some space for instructional activities. Third, employer locations throughout the city are used for

most of the instructional program. Fourth, the Counselor-Coordinators are provided office space at the center city offices of the Greater Philadelphia Chamber of Commerce.

The Academy facility is the central instructional site. The site selection was constrained by administrative requirements (e.g., reasonable proximity to employer locations and RBS offices), legal requirements (e.g., school licensing and building codes), and instructional requirements (e.g., sufficient space to conduct the program). The major factors tended to involve cost, location, and codes. The site eventually selected is housed on the fifth floor and the mezzanine floor of a downtown office building. The fifth floor is used for classroom space, secretarial space, the project's student records office and supplementary program staff office space. The mezzanine floor contains the Administrative suite, office space for the operational staff of the Basic Skills Unit, a computer room, the Individualized Learning Center, classrooms for the Career Guidance and Basic Skills Units and a student lounge area. Figure 3 shows the floor plans of the fifth floor and mezzanine, which comprise the Academy facility.

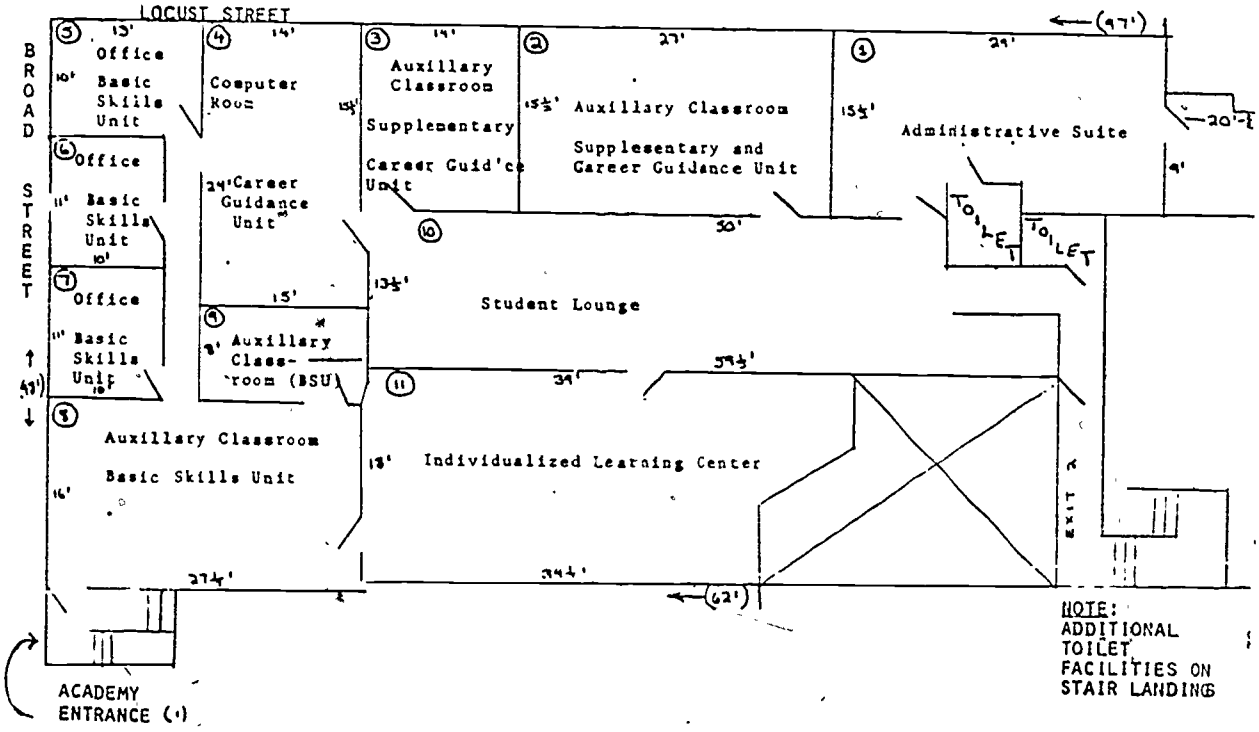
The utilization of floor space presented in Figure 3 represents a basic restructuring, from last year, of the physical layout of the Academy. The Administrative offices have been moved from the fifth floor to the mezzanine floor, and the Individualized Learning Center (ILC) has been moved to a new location. The move of the Administration offices has resulted in an increased level of contact between the Administration and student body of the Academy. The move of the ILC has greatly relieved the noise and space problems encountered in FY 1973. An overall effect of the reallocation of space has been a more efficiently and smoothly run operation.

Figure 3

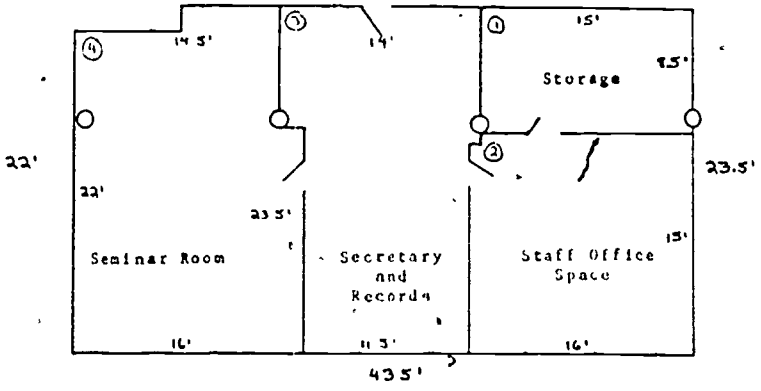
ACADEMY FOR CAREER EDUCATION

1405 LOCUST STREET

MEZZANINE FLOOR



FIFTH FLOOR



Employer Recruitment and Selection

The first step in the recruitment and selection of employers for participation in the Career Education Program is the identification of a cluster system which organizes the economic sector into manageable educational units. Every clustering system is based on dimensions perceived as most relevant to the overall objectives of the Career Education Program and the economic community in which the program operates. The clustering system provides a framework for the shaping of instructional objectives, the developing of instructional experiences, and the management and supervision of the Career Exploration Program within the Career Development Unit. Sixteen clusters have been identified as being relevant to the RBS Career Education Program and the Greater Philadelphia economic community. They were listed earlier in this section of the report. This is an addition of four clusters, or an increase of 33 percent to the program this year.

Contact was made with the Greater Philadelphia Chamber of Commerce during FY 1973. The Greater Philadelphia Chamber of Commerce was an established institution in the economic sector which had access to potential participating employers and which could provide and promote contacts with employers which, in turn, could lead to the development and implementation of Career Exploration and Career Specialization Programs. The Chamber of Commerce was presented with an overview of the goals and objectives of Employer-Based Career Education. Further discussions were held which led to a strategy that divided responsibility between the Chamber and program staff for contacting, recruiting, and developing programs with various employers.

The Chamber has had the major responsibility for contacting employers, and serving as liaison between the economic sector and the Academy for Career Education.

Procedures which have been developed and systematized for the identification and recruitment of employers fall into three phases. Phase One consists of the identification and recruitment of potentially involved employers (for more information see Task 10A1, "Formulate Processes, Procedures and Materials for Identification and Recruitment of Employer-Participants, and for the Maintenance and Continuing Refinement of their Involvement.")

Procedures used in Phase One are:

1. Based on the cluster system utilized, types of employers needed to implement the program are identified by the Career Education Program and these needs are relayed to the Greater Philadelphia Chamber of Commerce.
2. The Chamber of Commerce then contacts an official, usually the chief executive officer, of a company or business that fits into the cluster and briefly explains the purposes of the program and invites the company to participate. If the employer expresses interest, the Chamber informs him that a Counselor-Coordinator will contact a designated official of the company to describe the implementation of the program in detail.
3. The Chamber then gives the relevant information to the Counselor-Coordinator who in turn arranges for a meeting and then provides information regarding Employer-Based Career Education, the Academy

for Career Education, the student population, aspects of the cooperative arrangement with the public schools, and the objectives of Career Exploration and Career Specialization. The Counselor-Coordinator then asks the employer if he is interested in being involved in the program. If the answer is yes, the employer is asked to designate an Employer Coordinator to be responsible for the development of a program. The Counselor-Coordinator then outlines the kind of involvement that is needed, and asks the employer for any literature that specifically describes the operations in his business or organization.

Phase Two of the identification and recruitment process is the securing of a commitment to develop a program in Career Exploration or Career Specialization. This is essentially the responsibility of the Counselor-Coordinator. The procedures used for developing a program are as follows:

1. The Counselor-Coordinator arranges for a presentation with the Employer-Coordinator. This consists of how Career Exploration is operationalized, the function of the Academy for Career Education and the interrelationship of its components, the goal of career education and the rationale for the cluster system that is being used, a description of the student population and its size, the number of days desired for Career Exploration, the specific program goals and how these have been operationalized in the past,
2. The Counselor-Coordinator answers questions or concerns that are raised by the Employer Coordinator.
3. The Counselor-Coordinator secures a commitment to begin a series of planning meetings with the Employer Coordinator to develop a program.

Phase Three of the process of recruiting and selecting employers is the operationalization of the Employer Program Development Plan. This is primarily the responsibility of the Counselor-Coordinator who, in cooperation with the Employer Coordinator, is to develop a program.

The first step in the operationalization of the Employer Program Development Plan is the conducting of a site analysis. The Counselor-Coordinator is responsible for conducting this analysis although full participation by the Employer Coordinator is encouraged. When completed, the site analysis guides the selection and collection of information and provides a data format that makes this information readily available. Information about the employer's organization and operation is gathered by direct interviews during which the employer is asked to describe the major activities or functions that take place in his business or industry, by the securing of catalogues, flow charts, annual reports, and other organizational material already prepared by the employer, and by securing pamphlets, books and job descriptions prepared by governmental departments and agencies. After this information has been reviewed, the Counselor-Coordinator categorizes the employer site in terms of the clustering system and describes the major work activities and functions performed by the employer; these, in turn, are coded and their relationship to academic skill is identified. Occupational data that are required for these activities are then listed; these occupational data include the job classifications associated with each activity and function performed at the employer site, the skills associated with each job classification, and the academic and vocational prerequisites, aptitudes, interests, physical demands and environmental conditions related to the activities and functions.

Once the site analysis has been completed, the Employer Coordinator and the Counselor-Coordinator begin to develop the employer program activity cycle. The four major elements of the activity cycle are the employer instructional objectives, the instructional activities, management systems and an evaluation system. The instructional objectives specify the intent of the instruction in the particular employer program. The instructional activities are the means by which the instructional objectives are to be realized at the particular employer site; the site analysis provides the basis for identification of these means. The management system specifies the sequence of events, time and location of activities, supervising responsibility, and credit allocation. The evaluation system specifies the means of determining whether the program is meeting its objectives, as well as times and formats of formal feedback to employers.

The site analysis system described above was used to recruit the employers who participated in the Career Education Program. Employers and Counselor-Coordinators both reported that it was extremely time consuming and that it yielded a great quantity of unused information. The site analysis procedure accordingly has been revised; a new focused in-depth interview format is currently being field tested. The new format uses a series of eighteen questions to determine aspects of an employer site that are common (e.g., clerical activity at most sites, people operating machines at a manufacturing site, and people selling things at a department store), characteristic (e.g., surgeons for a hospital or teachers for a school), and unique (e.g., glassblowing at a specific site). Physical equipment and facilities, processes and systems, and general working conditions associated with jobs in each of these categories are identified. Feedback loops have been built

into this system so the Employer Coordinator can delete responses he feels are inappropriate, add responses he feels have been omitted, and compare his specific site to other sites of its type.

A total of 53 employers participated in the Career Education Program in FY 1973. Only one employer dropped out of the program during the course of the year; an additional thirteen declined to participate in FY 1974. Of the fourteen employers who declined to participate in FY 1974, six were not sought for continuation because their input was not considered adequate, three had internal reorganization problems, two felt they had completed their commitment, two felt that the students lacked interest and motivation, and two needed additional resources to continue. Thus, more than two-thirds of the employers participating in the Career Education Program last year have demonstrated a continuing interest and commitment to the program.

A total of 31 additional employers have been recruited and selected for participation in the Career Education Program for FY 1974. Added to the 39 employers from FY 1973 who continue to participate, this makes a total of 70 employers who have participated in the current year's Career Education Program. The areas of the Career Education Program in which employers have participated are listed below:

	NEW FY 1973	NEW FY 1974	CUMMULATIVE TOTAL
Career Exploration	31	25	56
Career Exploration and Career Specialization	8	--	8
Career Specialization	7	--	7
Career Specialization and Life Skills Specialization	--	3	3
Life Skills Specialization	7	3	10
TOTAL	53	31	84

Of the employers participating in the Career Education Program this year, nine have discontinued their involvement in the program. Of these nine, two were discontinued by the program because their input was not considered adequate, two reported they had insuffient manpower to provide a program, two stated that they were too busy for the number of students involved, one cited insuficient finances to continue, one saw little value to the program, and one was involved in a major building campaign. This leaves 61, or 87 percent, of the employers recruited for participation in the program for this year still commited to the Career Education Program. These 61 employers represent sixteen cluster experience areas, Career Specialization sites, and Life Skills Specialization sites. The new employers selected continue to represent both profit and non-profit organizations. This diverse sampling of the economic sector continues to be consistent with the goals and objectives of the Career Education Program. The composition of the group of employers in FY 74 represents an increase in both the scope and depth of the experience available to the students enrolled in the Career Education Program.

Use of Advisors and Policy Making

Advisory groups for educational programs may be drawn from school district personnel, the business and industrial community, local community groups, parents, students and agencies. Representatives from each of these groups are used in an advisory capacity for the Career Education Program. Selected representatives have been elevated to the status of active program policy determination by nomination and election to the Board of Directors of the Academy for Career Education.

The policy making function for the RBS Career Education Program is vested in the Board of Directors of the Academy for Career Education. Presently, the Board of Directors consists of twenty members: eleven employer representatives, four education representatives, three community representatives, and two labor representatives. In their capacity as Board members, these individuals do not officially represent the organizations with which they are affiliated. Eight of the eleven employer representatives are from companies that are participating in the instructional program. Of the four education representatives, two are from institutions of higher learning, one is from the Philadelphia School District, and one is a former teacher and teacher union leader. Two of the community representatives are from citizen committees on education, and the third is from a community-based educational organization.. The union representatives are from the garment workers and carpenters unions. In short, many traditional advisory groups have been elevated to the position of active policy makers and supervisors of the program. The Board meets at least once a month to consider and review the Career Education Program.

The Board has further encouraged the formation of advisory groups by voting to grant Board membership to parent and student groups when these groups are sufficiently organized to elect representation. Groups which are represented on the Board are also encouraged to act in advisory capacities. Employers not directly represented on the Board are encouraged to advise the program director, board members, or program staff as to courses of action they might want followed.

A stronger relationship between the Career Education Program and the Greater Philadelphia Chamber of Commerce has been promoted by several actions. A subcontract has been let to the Chamber making it directly responsible for

operational aspects of the program. The President of the Chamber has agreed to attend, and has attended, all Academy Board meetings in an advisory capacity. The Academy Board also decided that the individual participating employers are to have an effective voice in the selection of students for FY 1974.

Utilization of the Philadelphia School District as an advisory group has been increased in the past year. In addition to membership on the Academy Board, continuous contact is maintained with several personnel of the district to promote a close relationship between RBS and the Philadelphia School District. The Philadelphia School District and RBS has facilitated this relationship by approving the Director of Alternative School Programs for the Philadelphia School District as liaison between the two groups.

Efforts have also been made to establish and extend the cooperative relationship with Olney High School. Olney High School has granted RBS access to its student rolls, opened its facilities during the summer months for the recruitment and selection of students, made available the academic records of those students, made attempts to reschedule students into Academy activities, agreed to grant credit for Academy courses, and agreed to award a diploma to Olney students who successfully complete the Academy program. The administration of Olney also played a significant role in the recruitment and selection of students for the current school term. Among the suggestions adopted by the Career Education Program were the preference given to 11th grade students over 10th grade students and the preference given to 10th grade students who had attended Olney the year before. The Olney administration has also been consulted for advice regarding the formulation of the Career Education Program for next year.

The Research for Better Schools Board of Directors acts in a supervisory and advisory capacity to the Career Education Program. Through the RBS Executive Director reports to this group and receives their recommendations for the Career Education Program.

The National Institute of Education, the funding agency for the Career Education Program, has been a valuable resource for consultation, advice, and program direction. Reporting and correspondence are forwarded to NIE on a regular basis; informal and formal contacts have been most useful in refining the Career Education Program. NIE's site visit in February 1974 proved useful, as have the special meetings in Oakland, California in January 1974 and in New Orleans in February 1974. Special evaluation meetings conducted by NIE in Portland, Oregon in December 1973 and in San Francisco in March 1974 have provided a valuable resource for collective approaches to problems and issues.

A special Academy Board Retreat was held in January 1974; this retreat was attended by representatives of most of the groups listed above. In all, 35 persons representing the Academy Board, the RBS Board, RBS staff, NIE staff, the Greater Philadelphia Chamber of Commerce, the Philadelphia School District, and participating employers attended this retreat. The general concern of this retreat was the current status and future direction of the RBS Career Education Program. Among the general sessions and workshops conducted at the retreat were the nature and role of the institutions involved in the program, funding potential for the future, specific aspects of the Career Education Program, and the location of the Academy.

Participants in the retreat completed questionnaires at the conclusion of each session. Table 37 presents the results of this informal evaluation.

Table 37

Academy Board Retreat

Evaluation Questions

Sessions \ Questions	Q1	Q2	Q3	Q4	# Responses
1. General Session #1 Retreat Overview	3.71	4.00	4.00	3.50	8
2. General Session #2 Structure of Institution and Instruction	4.30	4.24	4.20	4.11	21
3. General Session #3 Evaluation, Replication, NIE and School District	4.35	4.22	4.12	4.14	19
4. General Session #5 Comparison of Recommendations	4.30	4.20	4.00	4.17	10
5. Workshop #1 Career Guidance	4.33	2.50	3.60	4.67	7
6. Workshop #1 Career Development	4.78	4.56	4.67	4.56	9
7. Workshop #1 Basic Skills	4.00	3.80	3.40	4.40	5
8. Workshop #2 Program Definition	4.80	4.20	4.40	4.60	5
9. Workshop #2 Chamber/Employer Perspective	4.89	4.56	4.67	4.67	9
10. Workshop #2 School District Perspective	5.00	5.00	4.80	4.75	10

Q1 = Was this General Session or Workshop worthwhile attending?

Q2 = Did it accomplish its objectives?

Q3 = Do you now have a clearer understanding of the topics and issues covered?

Q4 = Do you agree with the major conclusions or decisions reached?

Scale = Definitely No (1) 2 3 4 (5) Definitely Yes

Each session is listed down the left-hand side of the table, while the questions are listed across the top. Question content is included below the table. The scale used for all questions ranged from 1 = Definitely NO to 5 = Definitely YES. In all cases, higher numbers equal more favorable responses. The mean responses for each session by question are presented in the table.

The overall opinion of the retreat was very favorable; most responses were in the 4 to 5 range. Individual session ratings on "worthwhileness" ranged from 3.71 to 5.00 with an overall mean of 4.45. Individual session ratings on "accomplishing objectives" ranged from 2.50 to 5.00 with an overall mean of 4.13. Individual session ratings on "clearer understanding" ranged from 3.40 to 4.80 with an overall mean of 4.19. Individual session ratings on "conclusions or decisions" ranged from 3.50 to 4.67 with an overall mean of 4.36. While the overall ratings for each question were high, participants' favorable perceptions of the retreat's "worthwhileness" and "agreement with conclusions" exceeded their estimation of "accomplishment of objectives" and "clarification of understanding."

One source of advice that should not be overlooked in this report is the other Experience Based Career Education Programs. The cooperative efforts by all EBCE programs have resulted in the Common Instruments which have been described in this report. Efforts to address difficulties and find solutions to various problems have occurred and resulted in a mutual refinement of all programs. The Northwest Regional Educational Laboratory is analyzing the Career Maturity Inventory and will forward results on its validity to the other EBCE programs. Research for Better Schools is analyzing the Common Instruments; each project staff is participating in their development. This cooperative mutual advisory relationship between the programs has resulted in a better understanding of the different approaches used and a sharing of helpful ideas.

Student Recruitment and Selection

Student recruitment and selection in 1973 consisted of the selection and enrolling of 10th and 11th grade students who would participate in the core aspects of the Career Education Program (Career Development, Career Guidance,

and Basic Skills) and receive the supplementary aspects of the program from their sending school. The goal of the selection and recruitment process was the enrollment of 85 students in 10th or 11th grade for the Fall 1973 Academy for Career Education Program. This process has been described more fully in Special Evaluation Report 1, "The Student Recruitment and Selection Process," January 30, 1974.

The student recruitment process consisted of three phases. The initial phase was begun July 27, 1973 with the notification of 948 10th grade and 413 11th grade Olney High School students of the opening of applications for the Academy for Career Education Program. Students who were interested in the Academy program were invited to attend general information sessions held August 6 and 7, 1973. These sessions were designed to explain the Academy program's goals and objectives; the sessions were conducted by the Administrative Head of the Academy, the Public School Liaison Officer, the Career Guidance Team Leader, the Chamber of Commerce Project Director, two other RBS staff members and one employer representative. A total of 426 students attended these general information sessions; the students were divided into groups of 10 to 12 and 30 to 40 minute sessions were held with each group.

The general information sessions led to applications being completed and returned by 361 students. Of these, 85 were accepted for the program on the basis of 10th or 11th grade status, intact records, completed applications which included parental permission for participation, acceptable mental and physical capability, and acceptable attendance, grades, and conduct.

Of the 85 students accepted for the program, only 40 indicated that they would enroll. The less than desired enrollment necessitated a second phase of recruitment. This phase consisted of the review of the applications of

the 276 students who did not meet the admission criteria of the first phase. By August 27, 1973, 54 additional students were selected for the Academy Program. These students were considered marginal and rejected in the first phase of student recruitment. Preference was given to White students, particularly White males, in order to attain a racial balance in the enrolled population. Seven of these students indicated that they would enroll. In this second phase, 200 students were again considered ineligible for the Career Education Program.

In the first two phases of student recruitment, the following reasons were given for declining to participate:

1. extracurricular activities at Olney High School,
2. fear of losing contact with friends
3. close proximity to after-school jobs
4. misperception of the Academy as a vocational training center.

Since only 47 students had been enrolled in the first two phases of student recruitment, a third phase was conducted by the Public School Liaison Officer. Students who had not formally applied, but had expressed interest in the Academy program were individually interviewed and recruited at Olney High School. By August 29, 1973, 22 students who had been individually recruited were accepted and enrolled in the Academy program.

A total of 69 students were enrolled in the Academy for Career Education Program at the end of the three phases of student recruitment. Characteristics of grade level, sex, race, previous attendance, and previous grades of all applicants were analyzed to determine if any differences existed between those students who were accepted for the program and decided to enroll, those students who were accepted for the program and declined to enroll, and those students

who were considered ineligible for the program. Information was complete only for the grade level and sex of the applicants; data were incomplete for race, previous attendance, and previous grade average of the applicants; this was especially the case for those students who were considered ineligible for the program. The quantity of incomplete data restricted most comparisons to those between the students who enrolled and the students who were accepted for the program but declined to enroll.

Analysis of the grade level data indicated that 38 percent of the students accepted for the program were 10th grade students and 63 percent were 11th grade students. Of the students who were considered ineligible for the program, 85 percent were 10th grade students and 15 percent were 11th grade students. Table 38 presents the descriptive data for grade level of the recruited student sample.

Table 38

Recruited Student Sample: Grade Level

Student Characteristic	Accepted		Enrolled		Accepted/ Dropped		Rejected		Total	
Grade Level	#	%	#	%	#	%	#	%	#	%
Tenth Grade	59	37	14	49	25	27	169	85	228	63
Eleventh Grade	102	63	35	51	67	73	31	15	133	37
Total	161	100	69	100	92	100	200	100	361	100
Mean	80.50		34.50		46.00		100.00		180.50	

Chi Square analysis of the data revealed that significantly more 11th grade students were accepted for the program than was expected and that significantly fewer 11th grade students were rejected than was to be expected. The Chi Square analysis also indicated that a significantly greater number of 11th grade students declined to enroll in the Academy program after they were accepted. The Chi Square analysis is presented in Table 39. These statistics reflect the intended preference given to 11th grade students as well as the suggestion of the Olney administration that preference be given to 10th grade students who had attended Olney High School the previous year.

Table 39

Chi Square

Recruited Student Sample Grade Level

Disposition of Students	Tenth Grade f_e f_o chi-square	Eleventh Grade f_e f_o chi square	Chi Square
Enrolled n = 69	43.61 34 2.1176	25.39 35 3.6373	5.7549
Accepted/ Dropped n = 92	58.14 25 18.1899	33.86 67 32.4353	51.3252
Rejected n = 200	126.40 169 14.3572	73.60 31 24.6570	39.0142
Total N = 361	p = .632	p = .368	96.0943

df = 2, α = .05, critical value = 5.991

df = 1, α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_o - f_e)^2}{f_e}$

Information relating to the sex of applicants was analyzed; this information is presented in Table 40. Forty-eight (48) percent of the students accepted for the program were male and 52 percent were female. Of the students who actually enrolled in the program 59 percent were male and 41 percent were female. For the students who were accepted but declined to enroll in the program this ratio was reversed, 40 percent were male and 60 percent were female. Thirty (30) percent of the students who were considered ineligible for the program were male and 70 percent were female.

Table 40

Recruited Student Sample: Sex

Student Characteristic	Accepted		Enrolled		Accepted/ Dropped		Rejected		Total	
Sex	#	%	#	%	#	%	#	%	#	%
Male	78	48	41	59	37	40	62	31	140	39
Female	83	52	28	41	55	60	138	69	221	61
Not Available	0	0	0	0	0	0	0	0	0	0
Total	161	100	69	100	92	100	200	100	361	100

Chi Square analysis of the data indicated there was no difference between the numbers of males and females accepted for the program. The Chi Square analysis is presented in Table 41. However, when expected frequencies for the Chi Square statistic were based on the total number of applicants, there were significant differences found; this information is presented in Table 42. A significantly greater number of males enrolled in the program than was to be expected from the number of applications and a significantly greater number of females were rejected than was expected. These findings reflect the intent of the program administrators to enroll a student body which was sexually balanced. Since more females than males applied for the program, a greater

Table 41

Chi Square

Recruited Student Sample Sex

Disposition of Students	Male f_e	Male f_o	Female f_e	Female f_o	Chi Square
	chi-square		chi square		
Accepted	80.5	78	80.5	78	
	.0776		.0076		.1552

df = 1, α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_e - f_o)^2}{f_e}$

Table 42

Chi Square

Recruited Student Sample Sex

Disposition of Students	Male f_e	Male f_o	Female f_e	Female f_o	Chi Square
	chi-square		chi square		
Enrolled	26.77	41	42.23	28	
n = 69	7.5641		4.7950		12.3591
Dropped	35.70	37	56.30	55	
n = 92	.0473		.0030		.0503
Rejected	77.60	62	122.40	138	
n = 280	3.1360		1.9882		5.1242
Total N = 361	p =.388		p =.612		17.5606

df = 2, α = .05, critical value = 5.991

df = 1, α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_e - f_o)^2}{f_e}$

number of females had to be rejected if the enrollment was to be equal for each sex.

Data regarding the race of applicants were complete only for the students who enrolled in the program. This information is presented in Table 43. Of these 69 students, 78 percent were Black and 22 percent were White. Of the students who were accepted but declined to participate in the program 55 percent were known to be Black and 32 percent were known to be White.

Table 43

Recruited Student Sample: Race

Student Characteristic	Accepted		Enrolled		Accepted/ Dropped		Rejected		Total	
Race	#	%	#	%	#	%	#	%	#	%
Black	105	65	54	78	51	55	96	48	201	56
White	44	27	15	22	29	32	22	11	66	17
Not Available	12	08	0	0	12	13	82	41	94	27
Total	161	100	69	100	92	100	200	100	361	100

Table 43A

Chi Square

Recruited Student Sample Race

Disposition of Students	Black f_e chi-square	f_o	White f_e chi square	f_o	Chi Square
Enrolled	51.96	54	17.04	15	
n = 69	.0800		.2442		.3242
Dropped	60.24	51	19.76	29	
n = 80	1.4172		4.3207		5.7379
Rejected	88.85	96	29.15	22	
n = 118	.5753		1.7537		2.3290
Total N = 367	p = .753		p = .247		8.3911

df = 2, α = .05, critical value = 5.991

df = 1 α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_e - f_o)^2}{f_e}$

Chi Square statistics were computed based on the frequencies for which race was known. The Chi Square results are presented in Table 43A. The overall Chi Square was significant at the .05 level. The only individual comparison which proved to be statistically significant was the comparison of students who were accepted for the program but declined to enroll; the number of Whites who were accepted but declined to enroll was significantly greater than was expected.

Attendance data for all applicants were compiled for the previous year of school enrollment; information regarding attendance is presented in Table 44. The Career Education Program accepted students whose absence from school the previous year ranged from no absence to 29 days of absence. Much of the attendance data were unavailable; this was especially the case for students who were considered ineligible for the program; data were incomplete for 91 percent of these students. The average absence rate was computed for each of the groups based on available data. The average absence rate for enrolled students was 9.41 days. The average absence rate for students who were accepted but declined to participate was 11.50 days.

Table 44

Recruited Student Sample: Attendance

Student Characteristic	Accepted		Enrolled		Accepted/ Dropped		Rejected		Total	
Days Absent	#	%	#	%	#	%	#	%	#	%
24 - 29 days	24	15	9	13	15	16	1	.5	25	7
18 - 23 days	10	06	5	7	5	5	1	.5	11	3
12 - 17 days	10	06	5	7	5	5	0	0	10	2
6 - 11 days	26	16	15	22	11	12	2	1	28	8
0 - 5 days	60	37	32	46	28	31	13	7	73	20
Not Available	31	20	3	5	28	31	183	91	214	60
Total	161	100	69	100	92	100	200	100	361	100
Mean	10.67		9.41		11.50		5.68		9.88	

Chi Square analysis of this information revealed no significant difference in the two groups for whom data were relatively complete; the prior school attendance of the students who were accepted and enrolled in the program was not significantly different from the prior school attendance of the students who were accepted for the program but declined to enroll. The Chi Square analysis for attendance is presented in Table 45.

Table 45

Chi Square

Recruited Student Sample Attendance

Days Absent	Disposition of Students: Enrolled f_e	Enrolled f_o	Enrolled chi-square	Accepted/Dropped f_e	Accepted/Dropped f_o	Accepted/Dropped chi square	Chi Square
24 - 29	12.19	9		11.81	15		
n = 24			.8347			.8616	1.6963
18 - 23	5.08	5		4.92	5		
n = 10			.0012			.0013	.0025
12 - 17	5.08	5		4.92	5		
n = 10			.0012			.0013	.0025
6 - 11	13.21	15		12.79	11		
n = 26			.2425			.2505	.4930
0 - 5	30.48	32		29.52	28		
n = 60			.0758			.0782	.1540
Total N = 130	p = .508			p = .492			2.4383

df = 4, α = .05, critical value = 11.668

df = 1, α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_e - f_o)^2}{f_e}$

The Career Education Program accepted students whose previous grade averages ranged from 60 to 100; these data are presented in Table 46. Data were incomplete for 40 percent of the students rejected for the program, 8 percent of the students who were accepted but declined to enroll, and 3 percent of the students who enrolled. The previous grade average for the students who enrolled was 78.17; 48 percent of the students who enrolled had grades in the 70-79 range. The previous grade average for students who were accepted but declined to participate was 71.59; 53 percent of these students had grade averages in the 60-69 range.

Table 46

Recruited Student Sample Grades

Student Characteristic	Accepted		Enrolled		Accepted/ Dropped		Rejected		Total	
Grades	#	%	#	%	#	%	#	%	#	%
90 - 100	9	06	4	6	5	5	8	4	17	5
80 - 89	36	22	22	32	14	15	8	4	44	13
70 - 79	51	32	34	49	17	19	36	18	87	24
60 - 69	55	34	6	10	49	53	66	33	121	33
Not Available	10	06	3	3	7	8	82	40	92	25
Total	161	100	69	100	92	100	200	100	361	100
Mean	74.41		78.17		71.59		70.97		72.94	

Chi Square statistics were computed for comparisons between the enrolled group and the group which was accepted but declined to enroll. The rejected students were omitted from these comparisons because of the quantity of unavailable data; these data are presented in Table 47.

Table 47

Chi Square

Recruited Student Sample Grades

Grades	Disposition of Students: Enrolled f_e	Enrolled f_o	Enrolled chi-square	Accepted/Dropped f_e	Accepted/Dropped f_o	Accepted/Dropped chi square	Chi Square
90 - 100	3.93	4		5.07	5		
n = 9			.0012			.0010	.0022
80 - 89	25.73	22		20.27	14		
n = 36			2.4992			1.9395	*4.4387
70 - 79	22.29	34		28.71	17		
n = 51			6.1518			4.7762	*10.9280
60 - 69	24.03	6		30.97	49		
n = 55			13.5281			10.4966	*24.4966
Total N = 151	p = .437			p = .563			39.3936

df = 3, α = .05, critical value = 7.815

df = 1, α = .05, critical value = 3.841

f_e = expected frequency

f_o = observed frequency

Chi Square = $\sum \frac{(f_e - f_o)^2}{f_e}$

The number of students in the 70-79 and 80-89 ranges who enrolled was significantly greater than was expected. The number of students in the 60-69 grade range who declined to enroll was also significantly greater than was expected. There was no difference between the two groups in the 90-99 grade range. It would appear, on the basis of the Chi Square analysis, that students were self-monitoring decisions to enroll based on their grade average; this information indicates an area for further investigation.

Instructional Services

This part of the "Formative Evaluation Results" will describe the Instructional Services that have been provided so far this year in the Research for Better Schools Career Education Program. This section will present information regarding hours of instruction scheduled and attended, rates of attendance, grades earned in instructional activities, credits earned, and costs. This section will also present a description of the "typical" week for both 10th-11th grade and 12th grade students.

A total of 20,080 hours of instruction was scheduled for the fifth quarter. Of the total hours scheduled, 7032 or 35 percent were scheduled for the Career Development Unit, 2314 hours or 11.5 percent were scheduled for the Career Guidance Unit, 6164 hours or 30.7 percent were scheduled for the Basic Skills Unit, and 4570 hours or 22.8 percent were scheduled for the Supplementary Activities. For the 10th-11th grade students, 6787 hours or 33.8 percent of the total hours were scheduled across all activities; 13,293 hour or 66.2 percent were scheduled for the 12th grade students. These data are presented in Table 48. For the Career Development Unit, 3226 hours or 16 percent of the total hours scheduled for all activities were scheduled for 10th-11th grade students; 3806 hours or 19 percent of the total were scheduled for 12th grade students. For the Career Guidance Unit, 1254 hours or 6.3 percent of the total hours scheduled for all activities were scheduled for 10th-11th grade students; 1060 hours or 5.2 percent were scheduled for 12th grade students. For the Basic Skills Unit, 2307 hours or 11.5 percent of the total hours scheduled for all activities were scheduled for 10th-11th grade students; 3857 hours or 19.2 percent were scheduled for 12th grade students. For the Supplementary Activities, no hours were scheduled for the 10th-11th

Table 43

Hours of Instruction Scheduled
Fifth Quarter

Grade Level \ Unit	Career Development Hrs. %	Career Guidance Hrs. %	Basic Skills Hrs. %	Supplementary Hrs. %	TOTAL Hrs. %
10th-11th	3226 (16.0)	1254 (6.3)	2307 (11.5)	------	6787 (33.8)
12th	3806 (19.0)	1060 (5.2)	3857 (19.2)	4570 (22.8)	13293 (66.2)
ALL	7032 (35.0)	2314 (11.5)	6164 (30.7)	4570 (22.8)	20080(100.0)

* All percentages based on hours/total hours for all activities.

grade students since Olney High School provides that portion of their educational program; 4570 hours or 22.8 percent of the total hours scheduled for all activities were scheduled for 12th grade students.

A total of 16,688 hours of instruction were attended by the students in the Career Education Program. For the Career Development Unit, 6204 hours of instruction were attended; this is 37.2 percent of the total hours attended for all activities. For the Career Guidance Unit, 1946 hours of instruction were attended; this constitutes 11.7 percent of the total hours of instruction attended. For the Basic Skills Unit, 4395 hours of instruction were attended; this is 26.3 percent of the total hours of instruction attended. For the Supplementary Activities, 4143 hours of instruction were attended; this is 24.8 percent of the total hours of instruction attended. Tenth-11th grade students attended 5620 hours of 33.7 percent of the hours attended and 12th grade students attended 11,068 hours or 66.3 percent of the total attended. Information regarding hours of instruction attended is presented in Table 49.

Table 49

Hours of Instruction Attended
Fifth Quarter

Grade Level \ Unit	Career Development Hrs.	%	Career Guidance Hrs.	%	Basic Skills Hrs.	%	Supplementary Hrs.	%	TOTAL Hrs.	%
10th-11th	2942	(17.6)	999	(6.0)	1679	(10.1)	--------		5620	(33.7)
12th	3262	(19.5)	947	(5.7)	2716	(16.3)	4143	(24.8)	11068	(66.3)
ALL	6204	(37.2)	1946	(11.7)	4395	(26.3)	4143	(24.8)	16668	(100.0)

* All percentages based on hours/total hours for all activities.

For the Career Development Unit, 10th-11th grade students attended 2942 hours or 17.6 percent of the total hours attended by all students in all instructional activities; 12th grade students attended 3262 hours or 19.5 percent of the total. For the Career Guidance Unit, 10th-11th grade students attended 999 hours or 6.0 percent of the total instructional hours attended; 12th grade students attended 947 hours or 5.7 percent of the total instructional hours attended. For the Basic Skills Unit, 10th-11th grade students attended 1679 hours or 10.1 percent of the total instructional hours attended in all activities; 12th grade students attended 2716 hours or 16.3 percent. For the Supplementary Activities, no 10th-11th grade students attended since none were scheduled; 12th grade students attended 4143 hours or 24.8 percent of the total instructional hours attended.

A total of 3392 hours or 16.9 percent of the total hours of instruction which were scheduled for the fifth quarter were not attended. Of the scheduled

instructional hours not attended, 828 or 24.4 percent occurred in the Career Development Unit, 368 or 10.8 percent occurred in the Career Guidance Unit, 1769 or 52.2 percent occurred in the Basic Skills Unit, and 427 or 12.6 percent occurred in the Supplementary Activities. Tenth and 11th grade students did not attend 1167 scheduled hours of instruction or 34.4 percent of the total not attended; 12th grade students did not attend 2225 scheduled hours or 65.6 percent of the total scheduled hours not attended. Table 50 presents information regarding scheduled hours of instruction not attended. In the Career Development Unit, 10th and 11th grade students accounted for 284 hours of scheduled instruction not attended or 8.4 percent of the total and 12th grade students accounted for 544 unattended scheduled hours or 16.0 percent of the total. In the Career Guidance Unit, 10th and 11th grade students accounted for 255 unattended hours or 7.5 percent of the total and 12th grade students accounted for 113 unattended hours or 3.3 percent. In the Basic Skills Unit, 10th and 11th grade students accounted for 628 unattended scheduled hours of instruction of 18.5 percent and 12th grade students accounted for 1141 unattended hours or 33.7 percent of the total scheduled instructional hours not attended. In the Supplementary activities, 427 scheduled instructional hours were not attended by 12th grade students; this constitutes 12.6 percent of the total scheduled instructional hours not attended.

Table 50

Scheduled Hours of Instruction Not Attended
Fifth Quarter

Grade Level \ Unit	Career Development Hrs. %	Career Guidance Hrs. %	Basic Skills Hrs. %	Supplementary Hrs. %	TOTAL Hrs. %
10th-11th	284 (8.4)	255 (7.5)	628 (18.5)	-------	1167 (34.4)
12th	544 (16.0)	113 (3.3)	1141 (33.7)	427 (12.6)	2225 (65.6)
ALL	828 (24.4)	368 (10.8)	1769 (52.2)	427 (12.6)	3392 (100.0)

*All percentages based on hours/total hours for all activities.

The overall rate of attendance for all students in all activities was 83.1 percent. For the Career Development Unit, the overall rate of attendance was 88.2 percent. For the Career Guidance Unit, the rate was 84.1 percent. For the Basic Skills Unit, the rate was 71.3 percent and for the Supplementary Activities, the rate of attendance was 90.7 percent. The overall rate of attendance for 10th-11th grade students was 82.8 percent and the overall rate of attendance for 12th grade students was 83.3 percent. Information regarding rates of attendance is presented in Table 51. For the Career Development Unit, the rate of attendance was 91.2 percent for 10th-11th grade students and 85.7 percent for 12th grade students. For the Career Guidance Unit, the rate of attendance was 79.7 percent for 10th-11th grade students and 89.3 percent for 12th grade students. For the Basic Skills Unit, the rate of attendance was 72.8 percent for 10th-11th grade students and 70.4 percent for 12th grade students. For the Supplementary Activities, the rate of attendance for 12th grade students was 90.7 percent. Attendance for both 10th and 11th grade and 12th grade students appears to be reasonable for Career Development, Career Guidance, and Supplementary Activities. The attendance rate for all students in the Basic Skills Unit is a matter of some concern and should be investigated.

Table 51

Rates of Attendance
Fifth Quarter

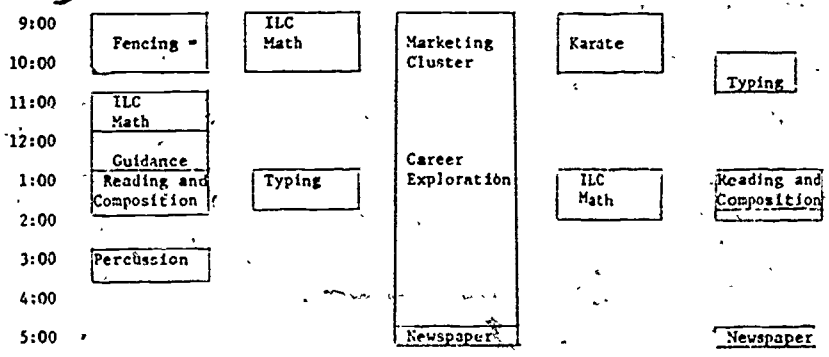
Grade Level \ Unit	Career Development Hrs.	%	Career Guidance Hrs.	%	Basic Skills Hrs.	%	Supplementary Hrs.	%	TOTAL Hrs.	%
10th-11th	91.2		79.7		72.8		------		82.8	
12th	85.7		89.3		70.4		90.7		83.3	
ALL	88.2		84.1		71.3		90.7		83.1	

A typical week has been reconstructured for a 12th grade student and a 10th-11th grade student.

A 12th grade student spends six hours a week in the Basic Skills Unit. One hour a week is spent in the Career Guidance Unit. At least one day per week is spent in the Career Development Unit. Two hours a week are spent in one elective Supplementary Activity and another two to three hours are spent on a second or third elective Supplementary Activity. Three hours a week are spent on a required Supplementary Activity. A "typical" roster for the week is presented below.

Figure 4

"Typical" Roster for a 12th Grade Student

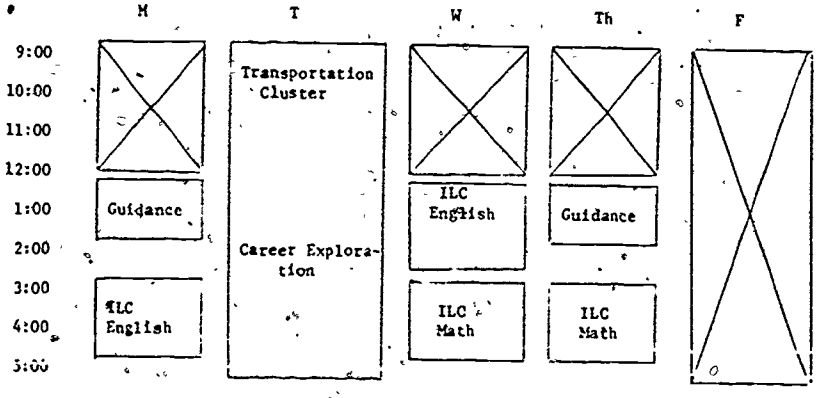


Since the 10th-11th grade student participates in courses and extra-curricular activities at Olney High School, his schedule for the Career Education program is different from that of a 12th grade student. The 10th-11th grade student typically spends five to six hours each week in the Basic Skills Unit, one day a week in the Career Development Unit, and two hours a week in the Career Guidance Unit. With the exception of the one day he spends in the

Career Development Unit, these activities are concentrated in the afternoon. A "typical" roster for a 10th-11th grade student is presented below.

Figure 5

"Typical" Roster for a 10th-11th Grade Student



A total of 221.57 credits were attempted in the fifth quarter by all students enrolled in the Career Education Program. Of these, 79.20 credits or 35.8 percent of the total attempted were in the Career Development Unit; 22.08 credits of 9.9 percent of the total attempted were in the Career Guidance Unit. Seventy (70.00) credits or 31.6 percent were attempted in the Basic Skills Unit, and 50.29 credits or 22.7 percent of the total were attempted to earn 79.40 credits or 35.8 percent of the total and 12th grade students attempted to earn 142.17 credits or 64.2 percent of the total credits. This information is presented in Table 52. In the Career Development Unit, 10th and 11th grade students attempted to earn 38.50 credits or 17.4 percent of the credits attempted in all activities, while 12th grade students attempted 40.70 credits or 18.4 percent of the total. In the Career Guidance Unit, 10th and 11th grade students

Table 52

Credits Attempted
Fifth Quarter

Grade Level \ Unit	Career Development Hrs. %	Career Guidance Hrs. %	Basic Skills Hrs. %	Supplementary Hrs. %	TOTAL Hrs. %
10th-11th	38.5 (17.4)	13.0 (5.8)	27.9 (12.6)	--------	79.4 (35.8)
12th	40.7 (18.4)	9.1 (4.1)	42.1 (19.0)	50.3 (22.7)	142.2(64.2)
ALL	79.2 (35.8)	22.1 (9.9)	70.0 (31.6	50.3 (22.7)	221.6(100.0)

* Percentages computed on credits/total credits for all activities.

attempted 13.00 credits or 5.8 percent of the total and 12th grade students attempted to earn 9.08 credits or 4.1 percent of the total. In the Basic Skills Unit, 10th and 11th grade students attempted to earn 27.90 credits or 12.6 percent of the total and 12th grade students attempted to earn 42.10 credits or 19.0 percent of the total. In the Supplementary Activities, 12th grade students attempted to earn 50.29 credits or 22.7 percent of the total credits attempted in all activities.

A total of 199.47 credits were earned in the fifth quarter in all activities of the Career Education Program. Of these, 78.10 or 39.1 percent of the total credits earned were in the Career Development Unit; 18.08 credits or 9.1 percent of the total were earned in the Career Guidance Unit. In the Basic Skills Unit, 55.90 credits or 28.0 percent of the total were earned; 47.39 credits or 23.8 percent of the total were earned in Supplementary Activities. Tenth and 11th grade students earned 74.70 credits or 37.4 percent of the total and 12th grade students earned 124.77 credits or 62.6 percent of the total. Information regarding credits earned in the fifth quarter is

presented in Table 53. In the Career Development Unit, 10th and 11th grade students earned 38.50 credits or 19.3 percent of the credits earned in all activities and 12th grade students earned 39.60 credits or 19.8 percent of the total. In the Career Guidance Unit, 10th and 11th grade students earned 10.40 credits or 5.2 percent of the total earned in all activities and 12th grade students earned 7.68 credits or 3.9 percent of the total. In the Basic Skills Unit, 10th and 11th grade students earned 25.80 credits or 12.9 percent of the total and 12th grade students earned 30.10 credits or 15.1 percent of the total credits earned in all activities. In the Supplementary Activities, 10th and 11th grade students earned no credit; 12th grade students earned 47.39 credits or 23.8 percent of the total credits earned in all activities.

A total of 90 percent of all credits attempted were actually earned. In the Career Development Unit, 98.6 percent of credits attempted were earned, while in the Career Guidance Unit, 81.9 percent of credits attempted were earned. In the Basic Skills Unit, 79.9 percent of credits attempted were earned, and in the Supplementary Activities, 94.2 percent of the credits attempted were earned. Tenth and 11th grade students earned 94.1 percent of all credits attempted and 12th grade students earned 87.8 percent of all

Table 53

Credits Earned
Fifth Quarter

Grade Level \ Unit	Career Development Hrs. %	Career Guidance Hrs. %	Basic Skills Hrs. %	Supplementary Hrs. %	TOTAL Hrs. %
10th-11th	38.5 (19.3)	10.4 (5.2)	25.8 (12.9)	--------	74.7 (37.4)
12th	39.6 (19.8)	7.7 (3.9)	30.1 (15.1)	47.4 (23.8)	124.8 (62.6)
ALL	78.1 (39.1)	18.1 (9.1)	55.9 (28.0)	47.4 (23.8)	199.5 (100.0)

* Percentages computed on credits/total credits for all activities.

credits attempted. Table 54 presents information regarding the percent of credits attempted that were earned.

Table 54

Percent Credits Attempted Earned
Fifth Quarter

Grade Level \ Unit	Career Development Hrs.	%	Career Guidance Hrs.	%	Basic Skills Hrs.	%	Supplementary Hrs.	%	TOTAL Hrs.	%
10th-11th	100.0		80.0		92.5		-------		94.1	
12th	97.3		84.6		71.5		94.2		87.8	
ALL	98.6		81.9		79.9		94.2		90.0	

In the Career Development Unit, 10th and 11th grade students earned 100 percent of the credits attempted and 12th grade students earned 97.3 percent of the credits attempted. In the Career Guidance Unit, 10th and 11th grade students earned 80.0 percent of the credits attempted and 12th grade students earned 84.6 percent of the credits attempted. In the Basic Skills Unit, 10th and 11th grade students earned 92.5 percent of the credits attempted and 12th grade students earned 71.5 percent of the credits attempted. In the Supplementary Activities, 12th grade students earned 94.2 percent of the credits attempted. Percent of credits attempted earned is reasonably high for 10th and 11th grade students in the Career Development Unit and the Basic Skills Unit; the percent of credits earned is low for 10th and 11th grade students in the Career Guidance Unit. Percent of credits earned is reasonably high for 12th grade students in the Career Development Unit and the Supplementary Activities; it is low in the Career Guidance Unit and the Basic Skills Unit. The poor rate of achievement in the Career Guidance Unit may be due to the low credit value assigned to these activities (.2 credit per quarter for 10th

and 11th grade students and .1 credit per quarter for 12th grade students). There is no apparent explanation for the low rate of achievement by 12th grade students in the Basic Skills Unit, other than the low attendance rate.

The overall average grade for all activities in the fifth quarter was 2.44 on a scale from 0 to 4 with A = 4, B = 3, C = 2, D = 1, F = 0. In the Career Development Unit, the average grade was 2.56 or C+/B-. For the Basic Skills Unit, the average grade was 2.28 or slightly above C. For the Supplementary Activities the average grade was a 2.90 or about a B. There is no average grade for the Career Guidance Unit since the grading system used in those activities was Pass/Fail. The average grade for 10th and 11th grade students in the fifth quarter was 2.39 or a C+; the average grade for 12th grade students was 2.46 or a C+. Information regarding average grades is presented in Table 55. In the Career Development Unit, the average grade for 10th and 11th grade students was 2.35 or about a C+; the average grade for 12th grade students was a 2.75 or B-. In the Basic Skills Unit, the average grade for 10th and 11th grade students was a 2.42 or C+, while the average grade for 12th grade student was 2.90 or B. Tenth and 11th grade students had about the same average grade in all activities. Twelfth grade students had about a B average in Career Development and Supplementary activities; however, they had only a C average in the Basic Skills Unit.

Table 55

Average Graders
Fifth Quarter

Grade Level / Unit	Career Development Hrs.	Career Guidance Hrs.	Basic Skills Hrs.	Supplementary Hrs.	TOTAL Hrs.
10th-11th	2.35	Pass/Fail	2.42		2.39
12th	2.75	Pass/Fail	2.16	2.90	2.46
ALL	2.56	Pass/Fail	2.28	2.90	2.44

* Based on 0 - 4 scale : A=4, B=3, C=2, D=1, F=0 .

A review of the instructional services provided during the fifth quarter shows that a total of 20,080 hours of instruction were scheduled and that 16,688 hours of instruction were attended. Rates of attendance varied sharply within the units of the Career Education Program: rates of attendance were reasonable for the Career Development Unit, the Career Guidance Unit, and the Supplementary Activities and well below expectation for the Basic Skills Unit. Students enrolled in activities which represent a total of 221.57 credits and actually earned 199.47 of those credits. Rates of earning credits were above 80 percent for all but 12th grade students in the Basic Skills Unit. The rate of earning credits is reflected in the grade averages of the students in the various activities; grade averages were at a C+ level or above for 10th and 11th grade students for all activities. Twelfth grade students has a B or B- average in all activities except the Basic Skills Unit where they had a C average.

Cost of Instructional Services

This section of the "Formative Evaluation Results" will present various cost analyses relating to the RBS Career Education Program. Comparisons will be drawn regarding the relative costs within the Career Education Program and with the Philadelphia School District. Comparisons with the School District will be limited to those for which figures are available.

The costs of the Career Education Program were computed in several ways: actual expenditure, cost per student, cost per hour of instruction scheduled, cost per hour of instruction attended, cost per credit attempted, and cost per credit earned. The cost information is presented in Tables 56 through 62.

The total expenditures for the Research for Better Schools Career Education Program for the fifth quarter were $91,148.00. This figure includes a $50,000 advance on a subcontract to the Greater Philadelphia Chamber of Commerce. To obtain a more realistic figure for the purpose of computing other information, it was decided that the average quarterly expenditure for the fifth and sixth quarter should be used. The average expenditure per quarter was $80,120.50. All actual expenditures listed in this report are based on the average quarterly expenditure. The actual expenditure for the Career Development Unit was $37,867.00 or 47.3 percent of the total expenditure. The actual expenditure for the Career Guidance Unit was $18,638.50 or 23.3 percent of the total. The actual expenditure for the Basic Skills Unit was $12,086.50 or 15.1 percent of the total. The actual expenditure for the Supplementary Activities was $11,528.50 or 14.3 percent of the total. The actual expenditure for 10th and 11th grade students was $31,955.62 or 39.9 percent of the total. The actual expenditure for 12th grade students was $48,164.88 or 60.1 percent of the total. Table 56 presents information regarding the actual expenditures in the Career Education Program. In the Career Development Unit, the actual expenditure was $17,418.82 or 21.7 percent of the total for 10th and 11th grade students and $20,448.18 or 25.6 percent of the total for 12th grade students. In the Career Guidance Unit, the actual expenditure was $10,064.79 or 12.6 percent of the total for 10th and 11th grade students and $8,573.71 or 10.7 percent of the total for 12th grade students. In the Basic Skills Unit, the actual expenditure was $4,472.01 or 5.6 percent of the total for 10th and 11th grade students and $7,614.49 or 9.5 percent of the total for 12th grade students.

In the Supplementary Activities, the actual expenditure for 12th grade students was $11,528.50 or 14.3 percent of the total.

Table 56

Cost: Average Quarterly Expenditure Fifth and Sixth Quarter

Grade Level \ Unit	Career Development		Career Guidance		Basic Skills		Supplementary		TOTAL	
	$0.00	%	$0.00	%	$0.00	%	$0.00	%	$0.00	%
10th-11th	17,418.82	21.7	10,064.79	12.6	4,472.01	5.6	----------		31,955.62	39.9
12th	20,448.68	25.6	8,573.71	10.7	7,615.49	9.5	11,528.50	14.5	48,164.88	60.1
ALL	37,867.00	47.3	18,638.50	23.3	12,086.50	15.1	11,528.50	14.3	$80,120.50	100

The average cost per student for the fifth quarter was $602.07; this cost is a weighted cost per student to allow for 12th grade participation in supplementary activities. The average cost per student for the core program only (Career Development, Career Guidance, and Basic Skills) was $511.88 for the fifth quarter. The cost per student in the Career Development Unit was $282.59. The cost per student in the Career Guidance Unit was $139.09. The cost per student in the Basic Skills Unit was $90.20. The cost per student in the Supplementary Activities was $177.36. The average cost per 10th and 11th grade student was $463.13. The average cost per 12th grade student was $741.00

Table 57 presents information regarding the costs per student. In the Career Development Unit, the average cost per student was $252.45 for 10th and 11th grade students and $314.59 for 12th grade students. In the Career Guidance Unit, the average cost per student was $145.87 for 10th and 11th grade students and $131.90 for 12th grade students. In the Basic Skills Unit, the average cost per student was $64.81 for 10th and 11th grade students and $117.15 for 12th grade students. In the Supplementary Activities, the average cost per 12th

Table 57

Cost Per Student Fifth Quarter

Grade Level \ Unit	Career Development	Career Guidance	Basic Skills	Supplementary	TOTAL
	$0.00	$0.00	$0.00	$0.00	$0.00
10th-11th	252.45	145.87	64.81	———	463.13
12th	314.59	131.90	117.15	177.36	741.00
ALL	282.59	139.09	90.20	177.36	$602.07*

* Cost per student in core program (without Supplementary Activities) is $511.88. $602.07 is weighted cost per student to allow for 12th grade participation in Supplementary Activities.

grade student was $177.36. The cost per 12th grade student was higher than the cost per 10th and 11th grade student for the Career Development Unit, the Basic Skills Unit, and the Supplementary Activities; the cost per 10th and 11th grade student was higher than the cost per 12th grade student for the Career Guidance Unit. The total average cost per 12th grade student was much higher than the total average cost per 10th and 11th grade student; most of this discrepancy is accounted for by the providing of Supplementary Activities for 12th grade students only. When the cost for the Supplementary Activities is removed, the cost per 12th grade student is $100.51 greater than the cost per 10th and 11th grade student. This difference partially reflects the greater individualization needed for students participating in Career Development Specializations and Basic Skills Independent Studies.

The average cost per hour of instruction scheduled was $3.99. The average cost per hour of instruction scheduled was $5.38 for the Career Development Unit, $8.05 for the Career Guidance Unit, $1.96 for the Basic Skills Unit, and $2.52 for the Supplementary Activities. The average cost per hour of instruction scheduled was $4.71 for 10th and 11th grade student and $3.62 for 12th grade students. Table 58 presents information regarding the costs per

Table 58

Cost Per Hour of Instruction Scheduled Fifth Quarter

Grade Level \ Unit	Career Development $0.00	Career Guidance $0.00	Basic Skills $0.00	Supplementary $0.00	TOTAL $0.00
10th-11th	5.40	8.03	1.94	------	4.71
12th	5.37	8.08	1.97	2.52	3.62
ALL	5.38	8.05	1.96	2.52	3.99

hour of instruction scheduled. In the Career Development Unit, the cost per hour of instruction scheduled was $5.40 for 10th and 11th grade students and $5.37 for 12th grade students. In the Career Guidance Unit, the cost per hour of instruction scheduled was $8.03 for 10th and 11th grade students and $8.08 for 12th grade students. In the Basic Skills Unit, the cost per hour of instruction scheduled was $1.94 for 10th and 11th grade students and $1.97 for 12th grade students. In the Supplementary Activities, the cost per hour of instruction scheduled was $2.52 for 12th grade students. The cost per hour of instruction scheduled was about equal for 10th and 11th and 12th grade students for all activities for which both groups were scheduled. The cost per hour of instruction scheduled was highest for the Career Guidance Unit, next highest for the Supplementary Activities, and lowest for the Basic Skills Unit. The relative standing of these costs partially reflects the intensity of staff involvement necessary for the programs to be implemented. Already prepared materials are used in the Basic Skills Unit. The Supplementary Activities had relatively high enrollment in the required activities. The Career Development Unit consists of explorative activities by relatively small groups (8 to 10 students at the largest). The Career Guidance Unit primarily provides small

small group or individual counseling. The nature of the activities is readily reflected in the relative costs per hour of instruction scheduled.

The average cost per hour of instruction attended was $4.80. The average cost per hour of instruction attended was $6.10 for the Career Development Unit, $9.58 for the Career Guidance Unit, $2.75 for the Basic Skills Unit, and $2.78 for the Supplementary Activities. The average cost per hour of instruction attended was $5.69 for 10th and 11th grade students and $4.35 for 12th grade students. Table 59 presents information regarding the costs per hour of instruction attended. In the Career Development Unit, the cost per hour of instruction attended was $5.92 for 10th and 11th grade students and $6.28 for

Table 59

Cost Per Hour of Instruction Attended Fifth Quarter

Unit / Grade Level	Career Development $0.00	Career Guidance $0.00	Basic Skills $0.00	Supplementary $0.00	TOTAL $0.00
10th-11th	5.92	10.07	2.66	-----	5.69
12th	6.28	9.05	2.80	2.78	4.35
ALL	6.10	9.58	2.75	2.78	4.80

12th grade students. In the Career Guidance Unit, the cost per hour of instruction attended was $10.07 for 10th and 11th grade students and $9.05 for 12th grade students. In the Basic Skills Unit, the cost per hour of instruction attended was $2.66 for 10th and 11th grade students and $2.80 for 12th grade students. In the Supplementary Activities, the cost per hour of instruction attended was $2.78 for 12th grade students. The higher costs per hour of instruction attended reflect the rates of absence in each activity.

The cost of absenteeism* to the Career Education Program was computed by multiplying the number of hours of absence for each activity by the cost per hour of scheduled instruction. The total cost of absenteeism to the program was $11,957.70 or 14.9 percent of the total expenditure for the Career Education Program in the fifth quarter. The cost of absenteeism was $4,454.88 or 37.2 percent of the total for the Career Development Unit, $2,960.69 or 24.8 percent of the total for the Career Guidance Unit, $3,466.09 or 29.0 percent for the Basic Skills Unit and $1,076.04 or 9.0 percent for the Supplementary Activities. The cost of absenteeism by 10th and 11th grade students was $4,799.57 or 40.1 percent of the total. The cost of absenteeism by 12th grade students was $7,158.13 or 59.9 percent of the total. Table 60 presents information regarding the costs of absenteeism. In the Career Development Unit, the cost

Table 60

Cost of Absenteeism
Fifth Quarter

Unit / Grade Level	Career Development $0.00	%	Career Guidance $0.00	%	Basic Skills $0.00	%	Supplementary $0.00	%	TOTAL $0.00	%
10th - 11th	1,533.60	12.8	2,047.65	17.1	1,218.32	10.2	----------		4,799.57	40.1
12th	2,921.28	24.4	913.04	18.8	2,247.77	18.8	1,076.04	9.0	7,158.13	59.9
	4,454.88	37.2	2,960.69	24.8	3,466.09	29.0	1,076.04	9.0	11,957.70	100.0

* All percentages based on cost/total cost for all activities.

of absenteesism was $1,533.00 for 10th and 11th grade students and $2,921.28 for 12th grade students. In the Career Guidance Unit, the cost of absenteeism was $2,047.65 for 10th and 11th grade students and $913.04 for 12th grade students. In the Basic Skills Unit, the cost of absenteeism was $1,218.32 for 10th and 11th grade students and $2,247.77 for 12th grade students. In the Supplementary

*Cost of absenteeism is not a real cost; rather it is an artificial statistic which estimates the cost of services not used.

Activities, the cost of absenteeism by 12th grade students was $1,076.04.

The cost per credit attempted in all activities was $361.60. The cost per credit attempted was $478.12 for the Career Development Unit, $844.13 for the Career Guidance Unit, $172.66 for the Basic Skills Unit, and $229.24 for the Supplementary Activities. The cost per credit attempted was $402.46 for 10th and 11th grade students and $338.78 for 12th grade students. Table 61 presents information regarding costs per credit attempted. In the Career

Table 61

Cost Per Credit Attempted Fifth Quarter

Unit / Grade Level	Career Development	Career Guidance	Basic Skills	Supplementary	TOTAL
	$0.00	$0.00	$0.00	$0.00	$0.00
10th-11th	452.44	774.21	160.29	——	402.46
12th	502.41	944.24	180.87	229.24	338.78
ALL	478.12	844.13	172.66	229.24	361.60

Development Unit, the cost per credit attempted was $452.33 for 10th and 11th grade students and $502.41 for 12th grade students. In the Career Guidance Unit, the cost per credit attempted was $774.21 for 10th and 11th grade students and $944.24 for 12th grade students. In the Basic Skills Unit, the cost per credit attempted was $160.29 for 10th and 11th grade students and $180.87 for 12th grade students. In the Supplementary Activities, the cost per credit attempted by 12th grade students was $229.24.

The average cost per credit earned was $401.67. The cost per credit earned was $484.85 for the Career Development Unit, $1,030.89 for the Career Guidance Unit, $216.60 for the Basic Skills Unit and $243.27 for the Supplementary

Activities. The cost per credit earned by 10th and 11th grade students was $427.79; the cost per credit earned by 12th grade students was $386.03. Table 62 presents information regarding the costs per credit earned. In the

Table 62

Cost Per Credit Earned Fifth Quarter

Grade Level \ Unit	Career Development	Career Guidance	Basic Skills	Supplementary	TOTAL
	$0.00	$0.00	$0.00	$0.00	$0.00
10th-11th	452.44	967.77	173.33	------	427.79
12th	516.37	1116.37	252.97	243.27	386.03
ALL	484.85	1030.89	216.60	243.27	401.67

Career Development Unit, the cost per credit earned was $452.44 for 10th and 11th grade students and $516.37 for 12th grade students. In the Career Guidance Unit, the cost per credit earned was $967.77 for 10th and 11th grade students and $1,116.37 for 12th grade students. In the Basic Skills Unit, the cost per credit earned was $173.33 for 10th and 11th grade students and $252.97 for 12th grade students. In the Supplementary Activities, the cost per credit earned was $243.27 for 12th grade students.

The only data which were available from the Philadelphia School District for purposes of comparison were those relating to cost per student per year. The cost to the Philadelphia School District of providing instructional services to secondary students was $1,234.83. This figure was computed by subtracting administrative and debt service costs from the total operating budget and multiplying that figure by the percentage of instructional services directed

toward secondary education. Comparable figures have been computed for the Career Education Program. Based on an extension of average expenditures for the fifth and sixth quarters, the cost of providing 9 months of instructional services to a 10th or 11th grade student is $1,389.52; the cost of 12 months of instructional services is $1,852.52 for a 10th or 11th grade student. The cost of providing 9 months of instructional services to a 12th grade student in the Career Education Program is $2,223.00; the cost of providing these services for 12 months is $2,964.00. Since only 12th grade students receive their entire educational program from the Academy for Career Education, that figure should be compared to the Philadelphia School District costs; for 9 months of instructional services, the comparison is $2,223.00 for the Career Education Program versus $1,234.83 for the Philadelphia School District. The cost of providing a Career Education Program is 1.8 times the Philadelphia School District's costs of providing educational services to the same level students.

A goal of the Career Education Program for this year was to reduce the per pupil cost of instructional services 30 percent to reach a $3,309.36 cost per student for the year. Costs incurred so far this year indicate that that goal will be met and surpassed. The cost of providing instructional services is listed below:

10th and 11th Grade Students

Cost per student for 9 months	$1,389.52
Cost per student for 12 months	1,852.52

12th Grade Students

Cost per student for 9 months $2,223.00

Cost per student for 12 months 2,964.00

Since it is anticipated that 12th grade students will graduate in June, 1974, the cost of providing instructional services for that group should be estimated by the 9 month figure of $2,223.00. It is anticipated that 10th and 11th grade students will participate in the Career Education Program during the Summer; the cost of providing instructional services to each of those students will be the 12 month figure of $1,852.52. In both cases, the figures are well below the anticipated cost per student of $3,309.36.

Summary

This section of the report has described the Career Education Program and presented formative evaluation results regarding the recruitment and selection of employers and site analysis, the support systems of the program, the use of advisors, the recruitment and selection of students, the instructional services provided to students, and the cost of providing those instructional services.

The Research for Better Schools Career Education Program consists of four elements: the Career Development Unit, the Career Guidance Unit, the Basic Skills Unit, and Supplementary Activities. The first three are available to all students in the program; the last is limited to only 12th grade students since Olney High School provides those aspects of the program to 10th and 11th grade students.

These activities are provided by 32 full-time professional staff. The staff fall into four categories: Program Administration (3), Evaluation (4), Design and Development (13), and Operations (12). Staff were viewed as being capable of

delivering all components of the program. The only staff areas in need of further development were the Career Development and Career Guidance Units, where interrelationships among the Chamber of Commerce Staff, the team leaders of the units, and the Project Director of the Chamber Staff were perceived as needing clarification and definition. Training was minimal due to the late date of finalization of the contract with the National Institute of Education.

Facilities used in the Career Education Program embrace four major sites: The Academy for Career Education, the RBS offices, the Greater Philadelphia Chamber of Commerce, and employer sites. The facilities are adequate for the needs of the current enrollment.

The recruitment and selection of employers is based on a clustering of employers into areas of related activities. Last year there were 12 clusters; this year 4 clusters have been added to the program, representing a 33 percent increase in this type of activity. A total of 84 employers has been recruited and selected for participation in the Career Education Program in the last two years. Of these, 53 were recruited last year and 31 were recruited this year. Of the 53 participating in FY 1973, 14 did not participate in FY 1974. Reasons for non-participation include: the activities were not adequate, funds or staff were unavailable, students were perceived as insufficiently motivated, and the employers were in the process of internal reorganization. An additional 9 employers have withdrawn from the program in FY 1974. Reasons for these withdrawals include: the activities provided were not adequate, funds or staff were not available, and involvement by the organization in a major building campaign. Of the 70 employers who have participated in the FY 1974 Career Education Program, 61 or 87 percent remain actively involved and interested in the program.

Policy making for the Career Education Program is vested in the Board of Directors of the Academy for Career Education. The composition of this board

includes representatives from industry, labor, education, and the community. Most advisory groups have been incorporated into the decision-making process by granting representation on the Board of Directors of the Academy. In addition to traditional advisory groups already having membership on the Board, the offer of Board membership has been extended to parent and student groups. Other advisory groups include NIE, the other Experience-Based Career Education Programs, and the Board of Directors of Research for Better Schools.

Student recruitment and selection in FY 1974 consisted of the selection and enrollment of 10th and 11th grade students who would participate in the core aspects of the Career Education Program (Career Development, Career Guidance, and Basic Skills) and receive the supplementary aspects of their program from their sending school. A total of 69 students were accepted and enrolled in the Academy for Career Education Program. An additional 92 students were accepted but declined to participate in the program. A total of 200 students were considered ineligible for the program. The greater portion of students accepted were 11th grade students. The rate of acceptance was about equal for each sex although more males than females enrolled. Few Whites applied for the program, and as a result 80 percent of the enrollees were Black. If this racial trend continues, the Career Education Program will have served members of only one population subgroup. Analysis of data on previous grade averages indicates that students with 70-89 averages who are accepted for the program decided to enroll, while students who were accepted with 60-69 averages declined to enroll. Two factors of the student recruitment process which warrant further investigation are the race factor and the apparent self-monitoring of decisions to enroll based on previous grade averages.

A review of the instructional services provided during the fifth quarter shows that a total of 20,080 hours of instruction were scheduled and that 16,688 hours of instruction were attended. Rates of attendance varied sharply within the units of the Career Education Program. Rates of attendance were reasonable for the Career Development Unit, the Career Guidance Unit, and the Supplementary Activities and well below expectation for the Basic Skills Unit, Students enrolled in activities which represent a total of 22.157 credits and earned 199.47 of those credits. Rates of earning credits were above 80 percent for all but 12th grade students in the Basic Skills Unit; there the rate was 71.5 percent. The rate of earning credits is reflected in the grade averages of students in the various activities. Grade averages for 10th and 11th grade students were at or above a C+ level for all activities. Twelfth grade students had a B or B- average in all activities except the Basic Skills Unit where they had a C average. Areas of particular concern are the rate of earning of credit by 12th grade students in the Basic Skills Unit and the rate of attendance by all students in the Basic Skills Unit.

The quarterly cost of providing instructional services was $602.07 per student; this is a weighted cost which accounts for 12th grade participation in the Supplementary Activities. The quarterly cost per student for the core program only was $511.88. The cost per credit earned was $401.76. Total operational expenditures in the Career Education Program in the fifth quarter were $91,148; this figure includes an advance of $50,000 on a subcontract for instructional services. The average quarterly expenditure for the fifth and sixth quarters was $80,120.50. Projected costs for providing 12 months of instructional services to 10th and 11th grade students are $1,852.52 per student. Projected costs for providing 9 months of instructional services to 12th grade students graduating in June 1974 are $2,223 per student. Both these figures are below the anticipated yearly cost per student of $3,309.36.

X. DISCUSSION AND RECOMMENDATIONS

This last section of the Interim Evaluation Report is intended to discuss in more depth selected issues and phenomena noted in the various sections above. In some cases it is attempted to interrelate information from several sections. Topics were selected for treatment in this section based upon their perceived import for the future of the program, the clarity with which they characterize the present program, or the themes which they suggest for further research and development in Career Education. This section is less formal than its predecessors; reflection and speculation are admissible as interpretive techniques. At the conclusion of each topic of discussion a recommendation derived from that discussion is presented.

Interim Evaluation Reports

This Interim Evaluation Report required approximately two man-months of effort to complete. It is essentially a final report without the benefit of final results. The importance of having this type of information, to the fullest extent of the data which can be made available, is understood and appreciated within the context of NIE funding considerations. However, it should also be understood that the mid-year period is the most demanding time in the conduct of program evaluation. Given this competition for resources between providing input for next year's funding and successfully completing this year's evaluation effort, the interim report should be focused as much as possible on those issues deemed by NIE to be most critical in considering future funding. This would result in a report which could discuss key issues more fully and eliminate program facets which may be interesting but might not warrant the resources necessary for explication at mid-year; the interim report could possibly be more useful and manageable. Individual program

evaluators could make the suggested decisions to select content, but it would be more appropriate for NIE to do so in its guidelines. This year's guidelines were well constructed and all inclusive; it is suggested that perhaps they were too inclusive for the task at hand.

Recommendation 1. Prior to funding next year, NIE should determine the content and extensiveness of major evaluation reports which are to be used for management and planning purposes. This would better enable the incorporation of NIE's interests into evaluation planning, and would result in more focused and usable evaluation reports. Such planning would have been difficult in the past, but, as the programs have achieved more resolution, such action has become more feasible.

Recommendation 2. After the nature and extent of reporting have been determined, a realistic level of resources should be allocated in the budget for the effort required.

Student Populations

It is apparent that the total of students available for analysis(261) is sufficient for extensive research and evaluation concerning student effects. However, the composition of the groups comprising this total presents some limitations. The ACE Group has been drawn from the city-wide secondary school population, while all other groups have been drawn from a single school, Olney High School. Also, the ACE Group received a comprehensive educational program from the Academy while the other experimental group, ACE-Olney, received a core career education program from the Academy and other curricular and extra-curricular offerings from their home school. Either one of these differences alone would make possible an additional controlled comparison, but the simultaneous presence of both makes them confounding factors which render some comparisons unclear. This situation cannot be remedied; it can only be tolerated and

considered in analysis. It will be resolved next year by the fact that ACE students will graduate. The other issue related to student populations does have relevance to planning. An advance has been made this year by the very existance of any control groups, and this advance should not be underestimated, but "pure" controls should be available next year to enhance the power of analytic conclusions. Randon assignment to experiemental and control groups is what is meant by the term "pure". In order for this to be possible recruitment must begin early, and the evaluation needs must be incorporated into the recruitment plan.

Recommendation 3. Every effort should be made to enable early recruiting of students, and selection should be made by random assignment of qualified candidates to experimental and control groups.

Instruments

Instrumentation often provides a rich source of difficulties for experimental projects. Given the options of standardized instruments or project developed measures, most evaluators select a combination of the two giving recognition to the weaknesses of each and finding safety in numbers. The double bind of standardized instrument not measuring program objectives and program developed measures lacking statistical backup and generalizability is seldom resolved. Few projects last long enough or have sufficient resources to produce technically sound measures which also allow valid comparison with non-project subjects. The Career Education Programs are subject to these difficulties. Significant advances in measurement have been made over the last year with the active support of NIE. One project is carefully investigating one standardized instrument which is in widespread use. Eahc laboratory has put resources into instrument development. The projects in concert have begun the development of common measures. But this represents only a beginning,

and resources for such research have been limited. A more concentrated and coordinated attack on the problem needs to be undertaken if it is to be solved. The sufficiency, appropriatenss and implications of each measure need to be investigated and explicated. Some facets of the problem may be approached by NIE determining priorities and criteria; given limited resources others may require a coordinated effort on the part of all participating projects. The effort would have significance for the presently implemented program as well as future measurement in Career Education.

Recommendation 4. The status of existing instrumentation should be assessed. The characteristics of standardized instrumentation as they relate to program objectives and the valid determination of comparative program effects should be investigated. A coordinated effort to maximize the technical soundness and generalizeability of project-developed instrumentation should be undertaken.

Attitudinal Differences by Grade

Results from the Student Opinion Survey indicated with consistency that twelfth graders' opinions of the program were less favorable than tenth and eleventh graders'. The absense of comparative logitudinal data makes it impossible to conclude that second year students decline in regard for the program, but a problem is definitely in evidence. The consistent attitude differences and lower grades and attendances in some areas for twelfth graders suggests the need for some directed action.

Recommendation 5. Project staff should make a special effort through counseling, instructional and personal interaction activities to determine the nature and extent of dissatisfaction among twelfth graders. If the phenomenon can be casually, defined a concerted effort should be made to correct it.

Recommendation 6. Since it is possible that the observed phenomenon

is an experimental effect, e.g., Hawthorne depreciation or cummulative measurement fatigue, it should be carefully observed next year, when comparable longitudinal data may be collected.

Utilization of Evaluation Findings

Although most of the scheduled evaluation reports have yet to be produced this year, two associated concerns are briefly noted in order to underline their importance. Last year, evaluation reports were technically strong but weak in ready applicability to program planning and development; they required more transition to user needs. Also, a related concern was determining the extent to which evaluation reports were actually used by project participants. Both of these concerns have been established as priorities for this year, but progress in meeting them has not been satisfactory. The extent of the task load has tended to deminish the time which can be devoted to results interpretation for different audiences. A plan for assessing the evaluation utilization has yet to be developed. The importance of accomplishing these priorities should again be emphasized.

Recommendation 7. The evaluation task load should be reexamined and prioritized to definitely permit the production of user-referenced reports and assessment of evaluation utilization. The possibility of excizing some facets of the evaluation in order to enhance these priority areas should be considered particularly for next year.

Basic Skills Development

Comprehensive Tests of Basic Skills (CTBS) pretest - posttest results were available only for the twelfth grade experimental students for the purposes of the present report. Analysis of the change scores indicated significant gains

over the five months of instruction covered. The observed better attendance and attitude of the tenth and eleventh graders would suggest that their gains will be even larger. Arithmetic skills, especially Arithmetic Computation and Arithmetic Concepts, showed generally diminished gains. Students who had not been participating in the Individualized Learning Center activities exhibited an overall loss. The lack of comparative data or tenth and eleventh grade data hinder interpretation of these results. But, even in their preliminary form, they suggest some action.

Recommendation 8. Possible program deficiencies in the areas of least evident basic skills student gains should be investigated. The program material or its utilization may be manipulated to better serve apparent student needs.

Recommendation 9. In view of the fact that students not in the Individualized Learning Center seem to regress (some of it is artifactual), non-assignment to this activity should be made very carefully. The alternatives to Center assignment should also be well considered.

Recruitment and Selection of Employers

The current cluster system of 16 clusters and 48 employers appears to be sufficient to provide Career Exploration and Specialization activities for the current enrollment of 134 students. However, the anticipated enrollment for next year is 300 students and the current cluster and employer system does not appear capable of providing adequate Exploration and Specialization experiences for a student body of that size.

Recommendation 10. Continuing efforts should be made to identify experience clusters relevant to the Career Education Program and to recruit and select employers to both maintain and extend the cluster system.

Recruitment and Selection of Students

It is planned that the student enrollment in the Career Education Program will be 300 next year. Of these, 100 are expected to be students who are participating in the program this year. An additional 200 students must be enrolled to bring the total enrollment to the desired level, assuming that 300 is a desired year-end enrollment. Past experience has indicated that twice the number desired must be accepted since only half the accepted students have enrolled. Attrition of students in the past has been at about a 30 percent rate over a year. Since the desired enrollment figure is a year-end figure, additional students should be accepted to account for expected attrition. The formula which has been derived is 2 x 1.3 x desired new enrollment of 200 for both rate of enrollment and attrition.

A control group of 100 students is desired for purposes of making comparisons. Previous experience is that a third of control group students have not been available for posttesting. To ensure a year end control group of a given size the following formula has been derived: 1.5x size of desired control group.

Recommendation 11.

A total of 670 students should be identified who could be accepted for the Career Education Program; these 670 would meet the Career Education Program's needs for enrollment and control group students. The figure of 670 students was derived in the following manner:

520 = 2 x 1.3 x desired new enrollment of 200

+ 150 = 1.5 desired control groups of 100

670 = the number of students who must be identified as being acceptable for the program.

A student enrollment is desired which is representative of the racial composition of Philadelphia students. The racial composition of students recruited this year was 78 percent Black and 22 percent White. The racial composition of students recruited the previous year was 61 percent Black and 38 percent White. If this trend continues, the Career Education Program will have served only one racial subgroup of the total population.

It is anticipated that selection of students for the Career Education Program next year will be a random selection from a pool of students who meet entrance requirements of the program.

Recommendation 12. Since the selection of students for the Career Education Program is to be on a random basis next year, efforts to obtain a representative racial composition will have to be focussed in the area of recruitment. Efforts to recruit students should be directed toward all racial subgroups of the population.

Instructional Services

A goal of the Career Education Program is the maximal utilization by students of all components of the program. This year both attendance and achievement in the Basic Skills Unit were less than optimal. Attendance by 10th and 11th grade and 12th grade students was slightly above 70 percent. Achievement, as indicated by rate of successful completion of credits for which students enrolled, was slightly above 70 percent for 12th grade students only.

Another goal of the Career Education Program is the participation by students in the specialization aspects of the Career Development and Career Guidance Units. This participation has been at a less than desired level so far this year.

Recommendation 13.

Efforts should be made to increase the motivation of students to both attend and achieve in Basic Skills Activities. Efforts to increase motivation have relied on intrinsic factors in the past; an investigation of the possible application of a combination of intrinsic and extrinsic motivational factors to the Basic Skills Unit should be conducted.

Recommendation 14.

Participation in the specialization aspects of the Career Development and Career Guidance Programs should be strongly encouraged by the Counselor-Coordinators. Students should be made more aware of the personal benefits that can accrue to them by such participation.

Support Systems: Staff and Facilities

An area of difficulty in staff interrelationships was a lack of definition in staff roles responsible for development and implementation in the Career Guidance and Career Development Units. Complexities in the relationship with the Greater Philadelphia Chamber of Commerce was seen as the source of this difficulty; questions of responsibility arose between the team leaders of the Career Development Unit, the Career Guidance Unit, and the Chamber's Project Director.

Recommendation 15.

A more concisely defined relationship should be developed with the Greater Philadelphia Chamber of Commerce to ameliorate any confusions regarding responsibility or accountability for the development and implementation of Career Development and Career Guidance activites. The roles of the team leaders of the Career Development and Career Guidance Units and the Project Director of the Chamber should be defined in terms of explicit function and related responsibilities.

Supplementary Activities

The Supplementary Activities are scheduled to be phased-out of the Career Education Program when 12th grade students graduate this year. However, students seem to be highly motivated to participate in this type of program; attendance (90.7%) and grades (B Average) are especially high for this program.

Recommendation 16.

Means of incorporating aspects of the Supplementary Activities into the other units of the Career Education Program should be investigated. This recommendation might relate to means of increasing student motivation in the Basic Skills Unit (Recommendation 13).