DOCUMENT RESUME

ED 109 496 95 CE 004 356

TITLE FY 1973 Evaluatin Report for the Research for Better Schools Employer-Based Career Education Model.
INSTITUTION Research for Better Schools, Inc., Philadelphia, Pa.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C. Career Education Program.
PUB DATE 30 Sep 78
NOTE 73p.; For other reports, see CE 004 405-407

EDRS PRICE MF-$0.76 HC-$3.32 PLUS POSTAGE
DESCRIPTORS *Career Education; Career Exploration; Cooperative Education; *Educational Programs; Grade 11; *Low Achievers; Pilot Projects; Program Content; *Program Evaluation; School Community Relationship; *School Industry Relationship; Secondary Education; Secondary Schools; Secondary School Students; Standardized Tests; Systems Analysis; Testing
IDENTIFIERS Academy for Career Education; Pennsylvania (Philadelphia)

ABSTRACT

The report evaluates the first year's operation of an employer-based career education project in Philadelphia, the Academy for Career Education, which recruited 107 participants, the majority of whom were 16 year-old 11th graders who had performed poorly in their sending schools, but have close-to-average IQ scores. Three standardized testing instruments indicated that during the year the students progressed more rapidly in reading, arithmetic, and language skills, understanding basic economic concepts, and the affective dimension of learning than they would have in public school. The employer systems instructional activities (career explorations, career specializations, and world of work seminars) merited positive evaluations except for the world of work seminars. The instructional systems component (individualized learning center, electives, and physical education) merited a mixed evaluation. In the student personnel systems component (life skills, exploration, and specialization), the student records system was found unsatisfactory, the counseling system satisfactory. In the management systems component, facilities were judged inadequate, administrative systems adequate. The evaluation concludes that employers in the Philadelphia area are willing and able to successfully provide the learning activities which have been termed career exploration and specialization. It ends with various recommendations for improving the project. (JR)

FY 1973

EVALUATION REPORT

FOR

THE RESEARCH FOR BETTER SCHOOLS

EMPLOYER-BASED CAREER EDUCATION MODEL

Submitted to

Career Education Program

National Institute of Education

by

Career Education Program

Research for Better Schools

1700 Market Street - Suite 1700

Philadelphia, Pennsylvania 19103

September 30, 1973

Table of Contents

INTRODUCTION

This report is intended to provide a summary discussion of the Research for Better Schools Career Education Project during its first year of operation. The topics included will be addressed from an evaluation perspective. Operational or developmental processes and issues will not be discussed at length, but reference will be made to their inclusion in other existing documents. This report will cover evaluation activities concluded between September 1, 1972 and August 31, 1973.

Program Goals

The following have been stated as major Employer Based Career Education goals (FY 1974 Operating Plans):

1. First, the project was designed to research the question: to what extent are employers willing and able to provide a total educational experience for students?
2. The second major project goal involves an effort to develop a transportable model of employer-based career education for replication in other settings.
3. The third major goal involves an overriding project commitment to provide a sound educational experience for participating students.

Within the context of these goals the program was operationalized employing three principal components: Management Systems, Instructional Systems and Student Personnel Systems. The staff responsible for each of these components developed the component-specific goals, objectives, activities and procedures which operationally defined each component and, in sum, characterized the project. These specific considerations have been presented in the milestone

series related to each major component and may be found in collected form in the "Operating Plans" (July 20, 1973).

The initial project year goals and objectives were organized for evaluation in Report 1.1.2 "Evaluation Model for Project Year One." For evaluation purposes the Instructional Systems Component was divided into Employer Systems (including Career Exploration, Career Specialization, and World of Work Seminar) and Instructional Systems (including the Individualized Learning Center, Supplementary Programs, Life Skills Programs and Psychomotor Programs). This division was made in recognition of the centrality of employer programs and the probability that they would exhibit unique characteristics. Although the evaluation structure was modified over the course of the year to reflect changes in project organization and conduct, the resulting configuration of four evaluation components (Employer, Instructional, Student Personnel and Management) may be used as a format for year-end reporting.

The objectives for each of these components, as specified in the Evaluation Model, were as follows:

1.0 Employer Systems Component

- 1.1 Employers will extend cooperation sufficient for the provision of career exploration and specialization.
- 1.2 Employers will develop in the quality and quantity of their commitment.
- 1.3 Students will learn through their involvement in the program.
- 1.4 A World of Work Seminar can be developed and conducted with the objective of providing an overall view of exploration, information, skills, concerns and issues related to career pursuits, as well as a forum for student discussion of these matters.

2.0 Instructional Systems Component

2.1 Instructional programs can be developed and administered to meet the students' academic needs as defined by State requirements, Academy requirements and student interests.

2.2 Psychomotor programs can be developed and conducted to meet students' physical needs.

2.3 A Life Skills Program can be devised and conducted to promote the development of skills in interpersonal relationships, critical personal values and other dimensions to be specified by staff and students.

3.0 Student Personnel Systems Component

3.1 A student records system can be developed and maintained with the capability of responding to staff and evaluation needs.

3.2 Student Counselors (Developmental Advisors) will be available to advise students on career, academic and personal matters to the students' satisfaction as they progress through the Academy.

3.3 The Student Personnel System will be able to adequately place students in careers, post secondary education or another secondary school upon their separation from the Academy.

4.0 Management Systems Component

4.1 The Academy facilities and resources will be adequate for staff and student purposes.

4.2 The Academy administrative systems will adequately serve staff and student needs.

4.3 Students will develop positive attitude toward learning, positive self concept and positive attitude toward Academy experiences.

These program objectives, as interpreted and stated by the evaluation staff, formed the basis for the first year evaluation effort. Their generality reflects the early stage of component development prevalent at the beginning of the first project year. Detailed standards were specified over time, as will be described below.

Evaluation Goals

The initial evaluation goals as stated in the Evaluation Model were:

1.0 To develop, establish and maintain a feedback system which will collect, process and disseminate information on all aspects of the project.

1.1 This system will be designed to monitor student opinions and concerns, refer them to appropriate project staff and relate results to students.

1.2 It will be designed to monitor staff opinions and concerns, define suggested changes and disseminate results.

1.3 It will be designed to monitor employer opinions and concerns, refer them to appropriate staff and relate results to employers.

1.4 The system will also provide summary data for progress and trend analysis during the course of project year one.

1.5 This information bank will further be a resource for staff working on individual student or group problems.

2.0 To define, measure, analyze and interpret project effects on students and staff.

2.1 This effort is aimed at evaluating the feasibility of employer-based systems.

2.2 It will further evaluate the effects (principally on students) of the project systems in relation to staff expectations and national or local norms.

The evaluation system was designed to be developing, adaptive and responsive. During the first project year its principal function was seen to be that of a formative agent. The data generated in this pursuit would have summative implication, but the state of the art, especially with regard to instrumentation, would not allow a more than rudimentary summative effort. It was planned that instrument development undertaken during the first year and refinement of evaluation technique would progressively enable more definitive, useful and sophisticated evaluation of the Research for Better Schools model.

Evaluation Model

The evaluation model thus projected an evaluative process which would initially focus on formative issues and gradually develop summative capability. The measurement process would further, of necessity, be initially subjectively based and would proceed toward objectification as refinement was possible. It was recognized that the lack of both derivative operational definitions with respect to program objectives and appropriate prepackaged instrumentation would be serious impediments. It was planned that the developmental focus of the evaluation effort would be in both these areas, while the formative evaluation would aim to assess identified elements of program operations and provide feedback for program improvement. It was planned that formative results would also provide a basis for summative evaluation. Both formative and summative efforts would draw upon the following sources of information:

1. Student questionnaires and interviews

2. Staff questionnaires and interviews
3. Employer questionnaires and interviews
4. Student background information
5. Staff background information
6. Employer background information
7. Measures of student progress
8. Observed events measured against objectives
9. Observed events measured against established regulatory criteria
10. Observed events measured against rational subjective criteria

The instruments (except standardized tests) and informational formats involved all had to be developed during the course of the year. A detailed description of this process may be found in Milestones 10, 11 and 12 "Evaluation of the Operations of the Academy for Career Education" (June 15, 1973). The data thus gathered were analyzed and presented in a series of reports designed to provide information for program development and to investigate feasibility and efficacy issues as they relate to program goals. This series of over fifty major reports is outlined in Appendix A.

Report Focus

For FY 1973 the evaluation processes and products were largely confined to the operational aspects of the Research for Better Schools Career Education Program. Such areas as fiscal analysis, replicability and long term planning were not considered to be manageable elements for inclusion in the first year evaluation. The present report will reflect this orientation. During FY 1973 these elements were a principal concern of the project management and extensive discussion of them may be found in the "Operating Plans"

(July 20, 1973). The present report is designed to serve as an evaluation of the first year of Academy for Career Education operations, based on the Evaluation Model (1.1.2) and the results obtained through its conduct.

METHODOLOGY

Subjects

First-year Academy students were recruited from the eleventh grade populations of Philadelphia's public (25) and parochial (13) secondary schools. These 38 schools combined enroll approximately 50,000 students in each grade. Newspaper advertising and mailings to school principals and guidance counselors were the media used for information dissemination. The recruiting process, which was conducted mainly during May and June 1972, resulted in 277 applicants. Of this number, 216 primary applicants were selected by a lottery procedure stratified to achieve an equal sex mix and a sample representative of the city's geographical distribution of secondary students. These applicants were all screened for disabling psychological, learning or somatic problems. Candidates were also required to have successfully completed their academic studies through the tenth grade curriculum. Of the 216 students selected by the lottery, 119 were both interested in actually enrolling in the Academy and deemed acceptable by the screening staff. Another 12 applicants withdrew before the start of classes, leaving 107 students as the final sample for the first year. Insufficient applicants for a randomly constituted stratified comparison group and logistical difficulties in constructing a city-wide group of matched subjects rendered control groups not possible for the first year. Thus the total number of subjects involved in the study was 107.

The student group had the following characteristics (for a complete discussion see Evaluation Report 5.1.2 "Characteristics of the Academy Student Population"):

The majority of students were 16 years of age upon enrollment in the Academy.

AGE	NUMBER OF STUDENTS	PERCENT OF STUDENTS
15 years	35	33
16 years	56	52
17 years	14	13
Unknown	2	2
TOTALS	107	100

The racial split was approximately 60% Black and 40% White. The sex split was approximately even. The Black Female subgroup was disproportionately large, while the White Female subgroup was disproportionately small.

NUMBERS OF STUDENTS			
Race \ Sex	Male	Female	Total
Black	26	39	65
White	27	14	41
Other	1	0	1
Total	54	53	107

Percent of Students			
Race \ Sex	Male	Female	Total
Black	24.3	36.5	60.8
White	25.2	13.1	38.3
Other	.9	0	.9
Total	50.4	49.6	100.0

A large majority of students previously attended the public schools.

TYPE OF SCHOOL	NUMBER OF STUDENTS	PERCENT OF STUDENTS
1. Public	78	72.9
2. Parochial	23	21.5
3. Private	2	1.9
4. Other	4	3.7
TOTALS:	107	100.0

Most students had average grades of D or lower from their sending schools. Only 18.7% had a B or higher, and 19.6% had a C average. This is not a refined measure, and grading systems differ from school to school, but these statistics do suggest that Academy students had generally low levels of performance in their previous schools.

GRADE	NUMBER OF STUDENTS	PERCENT OF STUDENTS
A or 100-90	1	.9%
B or 89-80	19	17.8%
C or 79-75	21	19.6%
D or 74-70	23	21.5%
E or 69-60	24	22.4%
F or 59 & below	9	8.4%
Unknown	10	9.4%
TOTALS:	107	100.0%

Complete and consistent data on past standardized test scores were not available, but partial data suggest depressed performance in this area also. A majority of students placed below the 30th percentile.

STANDARDIZED TEST PERCENTILES	NUMBER OF STUDENTS	PERCENT OF STUDENTS
99-90	4	8.7%
89-80	5	10.9%
79-70	1	2.2%
69-60	2	4.3%
59-50	1	2.2%
49-40	4	8.7%
39-30	3	6.5%
29-20	7	15.2%
19-10	6	13.0%
9-0	13	28.3%
TOTALS:	46	100.0%

With regard to parental occupation, students' reported the following categories with the most frequency for mothers : unemployed (housewife), technical and clerical. Those most frequently reported for fathers were: craftsmen, operatives, professional and service. The high number of non-respondents for fathers' occupation is probably partially accounted for by separated parents.

JOB CATEGORY	MOTHERS' OCCUPATIONS	FATHERS' OCCUPATIONS
01 Professional	4	8
02 Technical	10	2
03 Farmers	-	-
04 Managers	2	7
05 Clerical	9	2
06 Sales	2	2
07 Craftsmen	-	14
08 Foremen	-	2
09 Operatives	6	10
10 Private Household	-	-
11 Service	3	8
12 Farm Labor	-	-
13 Laborers	-	3
90 Unemployed	48	1
99 Unknown	23	48
TOTALS	107	107

The Ammons and Ammons Quick Test (QT) of verbal-perceptual intelligence yielded a mean score of 96.31, with a range of 56 to 127. This indicated a wide range of ability (as measured by this IQ test) with a reasonably high average. A comparison of the distribution of obtained scores with those derived from a norming sample also indicated a relatively "normal," though somewhat low, profile of scores.

In summary the group of subjects participating in the first year of Academy operations numbered 107. A majority were 16 year-old 11th graders who had previously attended public schools throughout Philadelphia. There were approximately the same number of Males and Females, while Blacks outnumbered Whites by a margin of 3 to 2. Most students had performed poorly in their sending schools, but had close to average IQ scores. This suggests that observed low achievement may be a performance effect rather than a phenomenon related to ability. Reported parental occupation types were spread through most of the categories with many "Unemployed (housewife) and Unknown" responses making generalization difficult.

Other groups of project participants which must be considered subjects of the study in a different sense were employers, staff and parents.

Employers were solicited throughout the Philadelphia area by representatives of the Greater Philadelphia Chamber of Commerce and Research for Better Schools. Of the approximately 70 companies approached for participation in the Academy program, 46 agreed. Potential employers were initially selected on an ad libitum basis, but in time vacancies in the cluster structure determined what type of firm should be approached. The employers participating during the first year are listed by number below along with selected characteristics.

Employer	Type of Company	Employees	Profit or Non-Profit
1	retail food	2,000	profit
2	automatic merchandising	5,000	profit
3	petroleum products	2,000	profit
4	investment brokers	75	profit
5	telephone communications	8,300	profit
6	investment brokers	230	profit
7	banking	1,500	profit
8	travel agency	10	profit
9	electrical apparatus manufacture	3,300	profit
10	space re-entry systems	6,000	profit
11	advertising	200	profit
12	hospital	3,300	non-profit
13	government	2,000	non-profit
14	travel agency	23	profit
15	broadcasting	200	profit
16	legal services	200	profit
17	business representative	60	non-profit
18	gas products service	3,000	non-profit
19	water and sewage service	1,600	non-profit
20	banking	750	profit
21	educational research	175	non-profit
22	synthetics manufacture	1,200	profit
23	diversified retailer	350	profit
24	research & development	100	non-profit
25	government	160	non-profit
26	government	100	non-profit
27	travel agency	1	profit
28	diversified retailer	3,500	profit
29	government	1,350	non-profit
30	broadcasting	27	profit
31	hostelry	450	profit
32	hostelry	400	profit
33	investment brokers	100	profit
34	dress manufacture	400	profit
35	insurance	4,520	profit
36	clothing manufacture	2,000	profit
37	hostelry	900	profit
38	library	860	non-profit
39	public transportation	6,800	non-profit
40	pharmaceuticals manufacture	950	profit
41	hostelry	400	profit
42	clothing manufacture	400	profit
43	government	6,000	non-profit
44	clothing manufacture	900	profit
45	publisher	1,300	profit
46	magazine	30	profit

As can be seen the employer sample represented a wide variety of products and services. Of the 46 firms, 13 (28%) were non-profit and the

remainder were established as profit-making concerns. The companies ranged in size from 1 employee to 8,300 employees in the Philadelphia area. The average size was 2,600 employees, with 22 under 500 and only 7 under 100. Eighteen (18) of the employers operated only in the Philadelphia region, while the remainder covered a larger area. The total size in terms of employees nationwide of the latter ranged from 36 to 1,200,000 with an average of 125,000. Twenty-four (24) of the firms were experienced in educational or training programs for employees, and 22 had been involved in other programs for secondary school students. A small number of employers (8) were remunerated for their participation, while the large majority were volunteer. In summary, the employers involved in the program were a diverse sample from the Philadelphia business community (including government). The firms or agencies tended to be large operations with most having organizations which exceeded the Philadelphia area in scope. Approximately half had previous experience with educational or training programs.

With regard to staff, Research for Better Schools personnel were allocated to operational functions as follows:

1. Management Systems Component - 1
2. Employer Systems Component - 4
3. Instructional Systems Component - 4
4. Student Personnel Systems Component - 4

An additional 13 positions were allocated for the development, administrative and evaluation staffs. Background or characteristics data were not collected for staff members.

No systematic data were collected on the parents of Academy students. An effort in this regard was intended, but time did not permit its inclusion.

Treatments

The treatment applied to students consisted mainly of the Academy curriculum. Elements of this will be only briefly outlined in the present report; for a detailed discussion see the Operating Plans (July 20, 1973). Instructional activities were conducted by three of the components identified above: Employer Systems, Instructional Systems and Student Personnel Systems.

Learning activities within the Employer Systems Component were all conducted at participating employer sites and may be classified as Career Explorations, Career Specializations and World of Work Seminars. The first two activities involved either individuals or small groups being exposed to programs developed by the employers and model staff and designed to provide first hand experience in a particular job, company or industry. These activities generally were scheduled for four one-day sessions over the course of a month, with three related employers, a cluster, providing instruction for each academic quarter. In all, twelve clusters of employers offered activities during the first year; they were categorized as follows: Communications, Finance, Government, Health, Logistics, Manufacturing, Research, Sales, Systems, Utilities, Hotels and Motels, and Apparel. The World of Work Seminars were designed and conducted by the Chamber of Commerce with the aim of providing an overview of the area industrial base and the career opportunities generated thereby, as well as providing a vehicle for student interaction concerning their employer-based experiences. In general, the activities offered under Employer Systems were intended to develop career awareness through direct experience with representative employers in the Philadelphia community.

Under Instructional Systems students were offered the Individualized

Learning Center, Electives and Physical Education.[1] The basic purpose of the Individualized Learning Center was to facilitate the attainment of minimum performance levels (approximately 9th grade) in Mathematics and Communications Skills for all Academy students. This was to be accomplished through the direct provision of individualized instruction using commercial materials indigenous to the Center, as well as the coordination of pertinent learning activities which could completed at other locations within the program. Students were assigned weekly time periods in the Center and placed in curricular materials based on their needs as determined by diagnostic tests. The materials included Individualized Learning for Adults, EDL Audio-Visual Materials, programmed grammar texts, advanced mathematics courses and others. Elective activities were designed to provide academic instruction complementary and supplementary to the basic educational experiences available through required course offerings. A wide variety of activities which would meet students needs and interests were intended. Instructors were solicited, mostly on a volunteer basis, from the Research for Better Schools staff, participating employers, and other agencies and individuals. Physical education activities were designed to provide students with the required minimum of two hours per week of physical activities matched to their needs and interests. A wide variety of activities were pursued through area YM(W)CA and YM(W)HA organizations, neighborhood recreation centers and programs constructed by Academy staff.

---

1. Life Skills programs were initially included here, but were transferred to Student Personnel Systems during the second quarter of operations; for this reason they are discussed under the latter heading in the present report.

Under Student Personnel Systems students were offered Life Skills Exploration and Specialization. Life Skills Exploration initially took the form of Workshops in Living which eventually evolved into Group Guidance Sessions. These activities were focused on developing self-knowledge and skills in interpersonal relationships. As they evolved, the concept of group guidance as a viable form of career guidance assumed more primacy. Students were exposed to generalized career information, career seeking skills and career-related self appraisals. These sessions were regularly scheduled small group activities. Life Skills Specializations were designed to expose students to real life social and psychological issues through on-site experience with community service agencies and groups. These activities were elective. Of instructional value, but in an entirely informal sense, students were also offered extensive individual counseling within the Student Personnel Systems Component.

In summary, students were generally scheduled for the following weekly activities as a requirement of the program: Career Exploration for 6 hours, World of Work Seminars for 1.5 hours, Individualized Learning Center for 4 hours, Physical Education for 2 hours and Guidance Groups for 1.5 hours. In addition, students needed 7 hours of electives to be selected from the following offerings: Career Exploration and Specialization, Electives and Life Skills Specialization. Students were thus scheduled for a program of approximately 22 hours per week.

No treatment in the traditional sense of the word was applied to employers, staff or parents. Their interaction with the Academy activities and students defined the nature and extent of their experience with the exper-

imental program. In the case of employers an orientation to the program was provided by project staff, assistance was given in the creation and conduct of their learning activities, and continual liaison was provided by the Field Coordinators. Each of these three staff members was assigned approximately 10 employers as a "case load." Since only 10 to 15 different employer learning activities were in progress during any one learning cycle, the amount of attention which could be devoted by the three Field Coordinators to each employer was considerable. Meetings where numerous employer representatives would interact and share experiences were also planned.

Staff were oriented to the project and their responsibilities by the supervisors in each component area. Staff sessions in the form of retreats and other meetings were also planned.

Parents were oriented to the project in group sessions conducted by the Project Director and individual interview sessions with project staff members. Meetings were also planned during the course of the year.

Instruments

Three standardized instruments were selected for administration to Academy students. The Comprehensive Tests of Basic Skills were used to measure performance in traditional achievement areas (Level 3 Form Q pretest, Level 4 Form Q posttest). The Test of Economic Understanding was selected to measure knowledge of basic economic concepts (Form B pretest, Form A posttest). The Personnal Orientation Inventory was used to measure affective dimensions (1 form). These instruments are not appended, but are further described in the presentation of results below.

The following instruments were developed by the evaluation staff for use with students, and are found in Appendix B in their final form. A "Student Information Sheet" was completed for each student from information available in Academy files. This provided basic background and demographic information on the student sample. A "Career Exploration Questionnaire" was developed to measure student attitudes and progress related to their Career Exploration experience. A questionnaire, the "Student Evaluation Report," was developed to monitor student attitudes and opinions concerning all aspects of the Academy program; a "Student Evaluation Interview Schedule" was also developed to gather similar information in a personal interview format. A "Student Questionnaire" was constructed to measure student expectations of the Academy, reasons for enrolling and general opinions. Each of these instruments was refined and revised over the course of the year based upon the quality of item performance and the content of program revision.

The following instruments were developed by the evaluation staff for use with the employers, and are found in Appendix B in their final form. The "Employer Information Sheet" was completed for each participating employer

by telephone interview. This provided basic data on the employers involved in the program. A questionnaire, the "Employer Evaluation Report," was developed to monitor employer attitudes and opinions concerning the Academy program and their participation in it; an "Employer Evaluation Interview Schedule" was also developed to gather similar information in a personal interview format. Each of these instruments was refined and revised over the course of the year based upon the quality of item performance and the content of program revision.

Only one instrument, the "Staff Evaluation Report," was developed for use with project staff members. This instrument was designed to elicit staff attitudes and opinions concerning various aspects of the program, as well as to gather basic data on operational functioning. This instrument was also refined and revised over the course of the year.

Design

The Academy program was offered to participating students on a quarterly schedule. Each learning activity was designed to encompass 12 weeks. Individual student programs were constructed by students and counselors based on expressed interest and evidenced academic need. The generalized requirements consisted of 1 Career Exploration Cluster per quarter, 4 hours of Individualized Learning Center activities per week, 2 hours per week of Physical Education, the World of Work Seminars and the Group Counseling sessions (both 1.5 hours). In addition, electives were available in Career Exploration and Specialization, the Electives (Supplementary) Program, and Life Skills Specialization. Each student was scheduled for approximately 22 instructional hours per week. The specific learning activities available are listed below; numbers in parentheses indicate the quarter of initiation; the 400, 500 and 900 Levels constituted the Electives Program:

100 Level - ILC English

(1) 101 - Basic
(1) 102 - 11th Grade
(1) 103 - Independent Study
(3) 104 - English Group

200 Level - ILC Math

(1) 201 - General Math
(1) 202 - Plane Geometry
(1) 203 - Algebra 1
(1) 204 - Algebra 2
(1) 205 - Trigonometry
(1) 206 - Independent Study
(3) 207 - Math Group

300 Level - Career Exploration

(1) 301 - World of Work Seminar
(1) 302 - Sears
(1) 303 - Wanamakers
(1) 304 - IRS

300 Level (continued)

(1) 305 - Hahnemann
(1) 306 - PGW
(1) 307 - GE/RESD
(1) 308 - RBS
(1) 309 - WFLN
(1) 310 - GE/Switchgear
(1) 311 - Continental Bank
(1) 312 - Acme
(1) 313 - Crestravel
(1) 314 - Marine Corps Supply
(1) 315 - Bell Telephone Co.
(1) 316 - Pepper, Hamilton & Scheetz
(1) 317 - University City Science Center
(1) 318 - Gray and Rogers
(1) 319 - Rohm and Haas
(1) 320 - Butcher & Sherrerd
(1) 321 - INA
(1) 322 - Civil Service Commission
(1) 323 - ARA
(1) 324 - Philadelphia Public Library
(1) 325 - ARCO
(1) 326 - KYW
(1) 327 - Wyeth
(1) 328 - SEPTA
(1) 329 - Philadelphia Water Works
(1) 330 - Cinderella Dresses
(2) 331 - Marriott Hotel & Restaurant
(2) 332 - PSFS (course)
(2) 333 - Bache & Company (course)
(2) 334 - Ben Franklin Hotel
(2) 335 - Bellevue Stratford Hotel
(2) 336 - Burnham
(2) 337 - J. H. Cohen
(3) 338 - Holiday Inn
(3) 339 - Robert Bruce Co.
(3) 340 - Yarnell
(3) 341 - Soowal
(3) 342 - HEW
(4) 343 - Chilton & Co.
(4) 344 - Philadelphia Magazine

400 Level - Seminars & Courses/English, Liberal Arts

(1) 401 - Literature as Self Expression
(1) 402 - Continuing English Improvement
(1) 403 - Applied Imagination
(1) 404 - Creativity

400 Level (continued)

(1) 405 - Guitar
(1) 406 - Art & Design
(1) 407 - Intro to Law, Law I
(1) 408 - Afro-American History
(1) 409 - Travel
(1) 410 - French
(1) 411 - Spanish
(1) 412 - German
(2) 415 - Art & Communication
(2) 416 - Law II
(2) 417 - Mood Modifiers
(2) 418 - Communications
(2) 419 - Short Story
(2) 420 - Self Exploration through Writing
(2) 421 - Creative Photography
(2) 422 - Social Anthropology
(2) 423 - Camping, Hiking & Wildlife Management
(2) 424 - Films
(2) 425 - Silkscreening, Printing & Blockprinting
(2) 427 - Drawing & Painting
(2) 428 - You and the Author
(2) 429 - Fundamentals of American Law
(3) 430 - Cultural Anthropology
(3) 431 - What Makes Sammy Run?
(3) 432 - Literature of the Civil War
(3) 433 - Basic Drawing
(3) 434 - Introduction to Architecture
(4) 435 - Archaeology

500 Level - Seminars & Courses/Math, Sciences, Business

(1) 501 - Shorthand I
(1) 502 - Typing
(1) 503 - Secretarial Procedures
(1) 504 - Statistics
(1) 505 - Psychology I
(1) 506 - Chemistry I
(1) 507 - Physics I
(1) 508 - Computer Science
(2) 509 - Psychology II
(2) 510 - Personal Grooming & Professional Modeling
(2) 511 - Heart & Lungs
(2) 512 - Muscles & Movement
(2) 513 - Eating, Using & Excreting
(2) 514 - Procreation
(2) 515 - Health Concerns of the High School Student
(2) 516 - Records Management & Office Procedures
(2) 517 - Business Administration
(2) 518 - Early Childhood Development

500 Level (continued)

(2) 519 - Keypunch Operation
(2) 520 - Sewing
(3) 521 - Knitting & Crocheting
(3) 522 - Training & Conditioning
(3) 523 - Getting Your Head Together
(3) 524 - Sex & the Single Student
(3) 525 - Weight Control
(3) 526 - Exploration of Mathematics
(4) 527 - Getting Your Body Together

600 Level - Career Specialization

(2) 611 - Secretarial
(3) 601 - Government
(3) 602 - Auto Mechanics
(3) 603 - Communications
(3) 604 - Boutique (Sales or Apparel)
(3) 605 - Crestravel (Logistics)
(3) 606 - Rohm & Haas (Research)
(3) 607 - Psychology
(3) 608 - Health
(3) 609 - Logistics
(3) 610 - Law

700 Level - Life Skills Exploration and Specialization

(1) 701 - Workshops in Living
(2) 702 - Group Counseling Sessions
(3) 703 - Ecology Food Co-op
(3) 704 - Police Department
(3) 705 - Salvation Army Day Care Center
(3) 706 - Pa. School for the Deaf
(3) 707 - Phila. Center for Older People
(3) 708 - Dreuding Nursing Home
(3) 709 - Nationalities Service Center
(4) 710 - Planned Parenthood
(4) 711 - Christian Street YMCA
(4) 712 - Phila. Convention Tourist Bureau
(4) 713 - Whittier Child Care
(4) 714 - Model Cities
(4) 715 - Allegheny House
(4) 716 - Court Bail Bond Program
(4) 717 - Community Advancement Program

800 Level - Physical Education

(1) 801 - Self Defense
(1) 802 - Gymnastics
(1) 803 - Swimming
(1) 804 - Basketball
(1) 805 - Modern Dance
(1) 806 - African Dance
(1) 807 - Fencing
(1) 808 - Weight Training
(1) 809 - Exercise
(1) 810 - Tennis
(1) 811 - Karate
(1) 812 - Fitness
(1) 813 - Color Guard
(1) 814 - Cheerleading
(1) 815 - Dance
(1) 816 - Soccer
(1) 817 - Volleyball
(1) 818 - Roller Derby
(2) 819 - JuJitsu
(2) 820 - Yoga
(2) 821 - Ice Skating
(2) 822 - Bowling
(2) 823 - Elaine Powers Figure Salon
(2) 824 - Aerobics
(2) 825 - Kung Fu
(3) 826 - General Activity
(3) 827 - Softball
(3) 828 - Cycling
(3) 829 - Golf
(4) 830 - Aikido

900 Level - Miscellaneous

(1) 901 - Independent Study - Sewing
(1) 902 - Independent Study - Writing
(1) 903 - Independent Study - Photography
(1) 904 - Independent Study - Environment
(1) 905 - Independent Study - Auto Mechanics
(1) 906 - Independent Study - Drums
(2) 907 - Independent Study - Sociology of the City
(2) 908 - Independent Study - Macbeth
(2) 909 - Independent Study - Dance
(2) 910 - Independent Study - Auto Mechanics II
(2) 911 - Independent Study - Special Problems in Psychology
(2) 912 - Independent Study - Drums II
(4) 913 - Independent Study - Business Math
(4) 914 - Independent Study - Creativity
(4) 915 - Independent Study - Health
(4) 916 - Independent Study - Writing Research Papers
(4) 917 - Independent Study - History

The Individualized Learning Center activities were conducted by the Instructional Systems staff. The Career Exploration and Specialization activities were conducted by participating employers with the assistance of the Employer Systems staff. The 400, 500 and 900 level elective courses were conducted by volunteers from Research for Better Schools, participating employers and other agencies and individuals from the community. The Physical Education activities were conducted mainly by the staffs of area recreational facilities. All learning activities were coordinated and supervised by project staff members.

Most individual employers represented one of the three members of a Career Exploration Cluster. Each cluster provided learning activities for a quarter, with each employer offering instruction for one full day in four consecutive weeks. There were deviations from this pattern, but in general each employer was active for one month of each quarter. Employers also had direct involvement with students through Career Specializations, which were not offered by all employers and which were not initiated until the second quarter of operations. The principal employer-staff interactions occurred through the Field Coordinators, who oriented employers, assisted in employer program development and closely monitored program operations. Several general sessions and cluster meetings were also held.

No uniform or structured orientation or in-service program was applied to staff members. Their involvement in the student program was, of course, a full-time proposition. The operations staff had primary responsibility for the on-going Academy activities, while the developmental staff was to be engaged in longer range conceptualization and research. In fact, this functional distinction could not be maintained due to the extreme press of operational

needs and issues. A staff retreat and occasional general staff meetings were held to disseminate information and promote interaction. Leaders within components also conducted smaller sessions on a regular basis to keep staff informed and working on a common basis.

For a more detailed discussion of these treatment application activities, see the milestone series in each area, the "Operating Plans" (July 20, 1973), or pertinent Evaluation Reports (indexed in Appendix A).

Regarding the collection of information, the standardized tests and Student Questionnaire were administered in a pretest-posttest design at the beginning and end of the academic year by the evaluation staff. The Comprehensive Tests of Basic Skills were administered in special large-group sessions; the Personal Orientation Inventory and Student Questionnaire were administered in the Group Counseling Sessions; and the Test of Economic Understanding was administered in the World of Work Seminars. Results were rapidly fed back to appropriate project staff for student placement and program development purposes. All data were then coded and entered into the Data Processing System developed over the year for analysis purposes. The Student and Employer Information Sheet data were collected upon entry into the program, entered for data processing and disseminated in evaluation reports.

The following instruments were indigenous to the present project, and were scheduled for monthly administration until developed to a point of demonstrated stability, when a quarterly administration cycle would take effect: Student Evaluation Report, Employer Evaluation Report and Staff Evaluation Report. All reached a quarterly status by the second quarter, with some alterations of plan. The Employer Evaluation Report proved unworkable due to the facility with which written response requests may be postponed or

mislaid. This instrument was accordingly reworked into the Employer Evaluation Interview Schedule for individual, personal quarterly administration by the evaluation staff beginning second quarter. The written Student Evaluation Report met with substantial non-response, and was abbreviated for mail administration second quarter to a randomly selected half of the student sample. This instrument was complemented by the Student Evaluation Interview Schedule, which was individually administered to the remaining students by a contracted professional interviewer beginning second quarter. The Staff Evaluation Report functioned well as a written-response instrument and also assumed a quarterly cycle second quarter. The results of these measurement processes were disseminated to staff and project subjects involved through evaluation reports. Data were not entered into the Data Processing System as their bulk would not have allowed time for coding and processing given the small size of the evaluation staff.

The Career Exploration Questionnaire was developed during the year but retained a monthly cycle since that coincided with the duration of individual employer programs. This instrument was administered by the evaluation staff in the Group Counseling Sessions. Results were reported to staff in evaluation reports and to students in special reports designed for discussion in the Group Counseling Sessions. These data were also treated manually.

For a more complete discussion of the instrumentation process, see Milestones 10, 11 and 12 "Evaluation of the Operations of the Academy for Career Education" (June 15, 1973).

The results from all instruments were disseminated to all staff members in the form of the evaluation reports indexed in Appendix A. While these findings were frequently discussed in the weekly Project Cabinet meetings and

with individual staff members, no structured follow-up mechanism was devised. It is therefore known that all data were available to project participants, but it is not known with any comprehensiveness the manner and extent to which the data were used. It was also not possible to tailor the reports to different audiences or spend adequate time on deriving consequences and recommendations for program development. These two limitations diminished the utility of the first-year evaluation effort.

RESULTS AND DISCUSSION

Data Analysis

Results are presented in three sections. The first is a discussion of standardized test results. These reflect on the project as a whole, and identify to what extent progress has been made in traditionally conceived academic areas. The second section addresses point-by-point the objectives from the Evaluation Plan stated above under "Program Goals". In this section the data available are more subjective and diffuse, but each point is covered in as diligent a manner as possible. The last section discusses other issues which were not formally included in the evaluation plan, but which merit attention in this year-end report.

The major standardized test utilized was the Comprehensive Tests of Basic Skills. This instrument was designed to measure performance in the cognitive areas traditionally construed as Reading, Arithmetic and Language. Since the item content has no intended coincidence with Academy learning sequence content, the instrument is purported to measure generalized knowledge.

During the Orientation Program preceding the first year of Academy operations all attending students (n=107) were administered the Comprehensive Tests of Basic Skills (CTBS) by the evaluation staff. Due to absences from individual sessions the data available for any one subtest represented approximately 100 students. Near the end of the academic year, during two special sessions in the middle of June, all attending students were administered an alternate form of the CTBS by the evaluation staff. These sessions were each attended by approximately 70 of the remaining 90 enrolled

students. Matching available pretest and posttest data resulted in 73 data pairs for Reading and Arithmetic and 57 data pairs for Language and Total Battery. More Reading and Arithmetic scores were available for analysis because students who missed these subtests in the first session were pursued in the second session even though this detracted from the completeness of other subtest data. This was done because of the perceived focal importance of Reading and Arithmetic achievement. Thus the results on Reading and Arithmetic gains represent 77% of the Academy student body, while Language and Total Battery gains represent only 63% of the Academy students.

Table 1 presents summary results in Grade Equivalent form. As can be seen, students gained on all subtest areas, except Arithmetic Applications, with a total mean gain of 0.54 of a grade level. Mean gains in Reading Vocabulary, Arithmetic Computation and Language Spelling were particularly high. Gains in Arithmetic Applications were negative (statistically not different), while gains in Arithmetic Concepts and Language Mechanics were particularly low.

Table 2 presents summary results in Scale Score form. These gains were subjected to T-statistic analyses assuming equal but unknown variance. The last column of the table presents the level of confidence with which the mean gains may be accepted as not due to chance variation. Although no acceptable level of confidence was pre-specified, the .90 level is considered reasonable for the initial phases of experimental project analysis. Using this criterion all total score gains would be considered reliable. The following additional subtest score gains would meet this criterion: Reading Vocabulary, Arithmetic Computation, Language Spelling. The

Table 1

Pretest - Posttest Comparisons on the CTBS

in Grade Equivalents

Variable	Pretest Score	Posttest Score	Change
I. Reading			
A. Vocabulary	9.04	9.75	+0.71
B. Comprehension	8.49	8.99	+0.50
C. Total	8.78	9.37	+0.59
II. Arithmetic			
A. Computation	7.61	8.29	+0.68
B. Concepts	8.07	8.26	+0.19
C. Applications	7.70	7.63	-0.07
D. Total	7.69	8.11	+0.42
III. Language			
A. Mechanics	8.04	8.37	+0.33
B. Expression	8.12	8.61	+0.49
C. Spelling	8.27	9.18	+0.91
D. Total	8.00	8.64	+0.64
IV. Total Battery	7.94	8.48	+0.54

In all cases for Reading and Arithmetic n=73; for Language and Total Battery n=57. This disparity occurs due to the decision to administer Reading and Arithmetic tests at the expense of others due to their perceived greater significance for the program.

TABLE 2

Pretest - Posttest Comparisons on the CTBS

in Scale Scores[1]

Variable	Pretest Score	Posttest Score	Change	Confidence Level[2]
I. Reading				
A. Vocabulary	568	597	+29	.97
B. Comprehension	557	570	+13	.80
C. Total	562	582	+20	.90
II. Arithmetic				
A. Computation	507	532	+25	.97
B. Concepts	524	533	+ 9	.73
C. Applications	524	521	- 3	.61
D. Total	504	525	+21	.92
III. Language				
A. Mechanics	542	553	+11	.75
B. Expression	548	564	+16	.82
C. Spelling	549	576	+27	.96
D. Total	537	561	+24	.93
IV. Total Battery	524	545	+21	.90

1. Scale Scores (Standard Scores) enable the use of a single distribution of scores for all levels and forms of the CTBS. For all tests the mean was established at 600 and the standard deviation at 100. Possible scores range from approximately 100 to 900. These scores are the most useful statistically.

2. Confidence Level refers to statistical probability, or the reliability, of findings. A finding with no possibility of occurrence by chance alone would have a confidence level of 1.00. These confidence levels were derived using T tests for predicted differences in one direction.

following subtest score gains could not be considered reliable using this criterion: Reading Comprehension, Arithmetic Concepts, Arithmetic Applications, Language Mechanics, and Language Expression.

Although in some respects the data are clearer than anticipated, their interpretation still remains problematic. Assuming that available data were representative, it is clear that, in general, students progressed in traditional academic skills during the course of the year. It is also apparent that some performance areas were facilitated better than others. In reviewing this difference by area it seems that replicative knowledge such as vocabulary and computation skills was affected more positively than interpretive knowledge such as comprehension and concepts skills. This is not what would be expected given the nature of the program, but it may be due to student type. Reading and Language were also affected more favorably than Arithmetic. This would be expected given the nature of the program. These observations have internal program implications.

The next task was to investigate these evidenced gains in terms of how they related to what gains might have been expected, and how they related to possible predictor variables.

In the absence of comparison group data and local normative information (which may become available at a later date), national normative data were used in an attempt to provide a context for expected gains. Based on year-end scores Academy students were on the low end of the percentile range for both Total Population and Large City Subpopulation Norms:

Test	Total Percentile	Large City Percentile
1. Reading Total	33	35
2. Language Total	26	28
3. Arithmetic Total	20	23
4. Total Battery	22	25

The 25th percentile norming group was selected to establish gain score expectations. First, 11th grade gains in terms of scale scores were determined. These represent the gains actually evidenced by the national norming sample over the course of a school year. These scores were then adjusted to account for test-retest discrepancies on different test forms. The adjustment figures were derived from two-week interval test-retest data on Form Q Levels 3 and 4 (data provided by California Test Bureau). The results in scale scores were as follows:

Test	Expected Gain	Expected Gain Adjusted	Actual Gain
1. Reading Total	38	27	20
2. Language Total	7	2	24
3. Arithmetic Total	29	15	21
4. Total Battery	32	16	21

The Expected Gain Adjusted figures represent the scale score gains evidenced by the 25th percentile subgroup of the national norming sample adjusted to reflect inter-form differences. The Actual Gain figures represent the mean scale score gains evidenced by Academy students. As can be seen from these comparisons, the Academy students exceeded the expected growth rates in every case but Reading Total. This would suggest that the academic progress exhibited by Academy students was greater than that which would have occurred in public school.

Achievement gain scores were also analyzed to determine whether or not gains were dependent upon student characteristics. Table 3 presents the results of correlations involving selected student demographic and entry level characteristics. Sex group membership showed 1 significant Language subtest relationship and 2 significant total score relationships. The implication is that females tended to improve more than males on some language tasks. Age yielded only 1 significant relationship indicating a tendency for younger students to gain more than older students. Racial group membership was found to be totally unrelated to gains. I.Q. showed significantly positive relationships with Reading Vocabulary and Arithmetic Computation, but a negative relationship with Language Spelling. Pretest scores yielded a significantly positive correlation with Reading Vocabulary but significantly negative ones with Reading Comprehension, Language Mechanics and Language Spelling. The lack of strong and consistent relationships found in these analyses indicates that the Academy program has not had general differential effects on students as categorized by the variables selected. Further analyses were precluded by this finding. This has very positive implications for the Academy program in that some population subgroups are

Table 3

Correlations Between Achievement Gains

and Selected Student Characteristics

Gain Scores \ Characteristics	Sex	Age	Race	I Q	Pretest
I. Reading					
A. Vocabulary	.03	-.17	-.04	.29**	.29**
B. Comprehension	-.03	-.12	-.01	-.01	-.33**
C. Total	.00	-.22	.00	.18	.07
II. Arithmetic					
A. Computation	.02	-.16	-.10	.26*	-.11
B. Concepts	-.15	-.27**	-.11	.19	-.04
C. Applications	-.09	-.02	-.13	-.10	.15
D. Total	-.04	-.20	-.07	.22	-.17
III. Language					
A. Mechanics	-.27*	.25	.18	.05	-.32*
B. Expression	-.02	.00	.00	.16	-.01
C. Spelling	-.18	.25	.13	.44**	-.61**
D. Total	-.29*	.24	.13	.02	-.22
IV. Total Battery	-.32*	-.12	.04	.17	.16

* $p.<.05$ where $R(X,Y) > .23$ (df = 70) and .26 (df = 55)

** $p.<.01$ where $R(X,Y) > .27$ (df = 70) and .34 (df = 55)

In cases where variable scores were categorical rather than scaled (sex and race) artificial dichotomous variables (X or not X) were established for analytic purposes. Correlation figures are reported for one category only, indicating a positive or negative favoring of that category.

apparently not favored over others with regard to what they may be expected to gain from the program. Further the negative relational tendency evidenced by pretest scores would indicate that, at least in several areas, the students who need it the most are gaining more.

Another variable that was posited as having an effect on academic progress was student attendance. Tables 4, 5, and 6 present the correlations of attendance data by course and quarter with achievement gain scores. It is apparent from these analyses that course attendance bore no consistent relationship with standardized test gains. The persistent lack of significant relationships in this area is striking but not enigmatic. As discussed in numerous evaluation reports the attendance data itself cannot be considered reliable, and chance variation here could obscure relationships. It is also possible that attendance variations only in extremes would have facilitating or debilitating effects on the program's capability to produce gains. The various hypotheses suggested by these data will be the topics of analyses during FY 1974.

In summary, it can be stated that Academy students gained in most traditional academic skills through a non-traditional curricular experience. Achievement gains measured by the Comprehensive Tests of Basic Skills seemed to be both statistically reliable and practically significant. The availability of comparison group data and normative group data would permit the drawing of conclusions with more directness and clarity.

Table 4

Correlations Between Achievement Gains and First Quarter Course Attendance

Courses / Gain Scores	ILC English	ILC Math	WOWS	CE 1	CE 2	CE 3	WIL
I. Reading							
A. Vocabulary	-.01	-.01	.10	.20	.10	-.04	.14
B. Comprehension	-.06	-.08	-.09	.09	-.08	.09	-.04
C. Total	-.05	-.06	-.03	.20	.01	.07	.07
II. Arithmetic							
A. Computation	.02	.03	.03	.12	.14	.16	.09
B. Concepts	.00	.00	-.02	.00	.00	.12	.08
C. Applications	-.02	-.02	.01	-.05	.00	-.13	-.01
D. Total	.02	.02	.02	.07	.10	.12	.09
III. Language							
A. Mechanics	.12	.11	.06	.05	-.02	.09	.26*
B. Expression	.03	.02	.11	-.07	.11	.18	.16
C. Spelling	.20	.20	.08	.15	.05	.12	.12
D. Total	.23	.22	.12	.11	.09	.20	.32*
IV. Total Battery	.15	.14	.03	.18	.16	.28*	.29*

* $P < .05$ where $R(X,Y) > .23$ (df = 70) and .26 (df = 55)

** $P < .01$ where $R(X,Y) > .27$ (df = 70) and .34 (df = 55)

ILC - Individualized Learning Center
WOWS - World of Work Seminars
CE - Career Exploration
WIL - Workshops in Living

Table 5

Correlations Between Achievement Gains

and Second Quarter Attendance

Courses / Gain Scores	ILC English	ILC Math	WOWS	CE 1	CE 2	CE 3	WIL
I. Reading							
A. Vocabulary	.15	.14	-.17	.02	.03	-.05	.11
B. Comprehension	-.15	-.13	-.10	-.01	.20	-.07	-.05
C. Total	-.02	-.02	.01	.02	.16	-.02	.04
II. Arithmetic							
A. Computation	.17	.17	.02	.09	.13	.08	.16
B. Concepts	.01	.01	-.09	-.02	-.02	.06	.03
C. Applications	-.07	-.09	-.06	-.03	-.07	-.02	.02
D. Total	.15	.14	-.03	.04	.09	.13	.12
III. Language							
A. Mechanics	.15	.23	.04	-.04	.24	-.03	.16
B. Expression	.11	.11	.21	.14	.12	.18	.10
C. Spelling	-.04	.02	.17	.05	-.03	.12	-.10
D. Total	.13	.21	.18	.11	.22	.19	.07
IV. Total Battery	.14	.17	-.02	.12	.18	.21	.12

* $p < .05$ where $R(X,Y) > .23$ (df = 70) and .26 (df = 55)

** $p < .01$ where $R(X,Y) > .27$ (df = 70) and .34 (df = 55)

ILC - Individualized Learning Center
WOWS - World of Work Seminars
CE - Career Exploration
WIL - Workshops In Living

Table 6

Correlations Between Achievement Gains

and Third Quarter Attendance

Courses / Gain Scores	ILC English	ILC Math	WOWS	CE 1	CE 2	CE 3	WIL
I. Reading							
A. Vocabulary	.17	.18	.17	.20	.08	.13	.02
B. Comprehension	.13	.11	.09	-.03	-.01	-.01	-.08
C. Total	.21	.20	.15	.13	.04	.09	-.07
II. Arithmetic							
A. Computation	.04	.06	.09	.10	.08	.12	-.18
B. Concepts	.03	.04	.05	.20	.02	.18	-.14
C. Applications	-.19	-.19	-.09	.12	-.04	-.03	.15
D. Total	-.03	-.01	.09	.20	.04	.18	-.16
III. Language							
A. Mechanics	.27*	.28*	-.06	.06	.05	-.03	-.03
B. Expression	.05	.03	.03	.06	.06	.07	.06
C. Spelling	-.03	-.06	-.02	.07	.18	-.05	.20
D. Total	.20	.19	.02	.08	.13	.03	.03
IV. Total Battery	.13	.12	.12	.25	.06	.14	-.05

* $p < .05$ where $R(X,Y) > .23$ (df = 70) and .26 (df = 55)

** $p < .01$ where $R(X,Y) > .27$ (df = 70) and .34 (df = 55)

ILC - Individualized Learning Center
WOWS - World of Work Seminars
CE - Career Exploration
WIL - Workshops In Living

The two remaining standardized instruments were selected to measure economic conceptual knowledge, the focus of the World of Work Seminars, and non-cognitive dimensions, the focus of the Life Skills Explorations. These instruments were the Test of Economic Understanding and the Personal Orientation Inventory.

The Test of Economic Understanding was designed to fill a measurement gap "in assessing student understanding of the basic economic concepts essential for good citizenship." Alternate forms of the test were administered to Academy students in beginning and end of the year sessions of the World of Work Seminars. Summary data are presented in Table 7. Students exhibited small but consistent gains which were statistically significant ($p < .05$). The actual size of the gains would seem to make any practical significance unlikely. The test instrument itself was found to have several limitations. The reading level required to understand the questions, regardless of knowledge of the concepts involved, seemed to be too high to allow general applicability of the instrument to urban high school populations. Correct answers were constructed based upon particular theoretical orientations which are neither universal nor constant; the item validity is thus dependent upon "point of view" to a greater extent than would be desireable. The normative data provided also raise some questions regarding applicability. Although no time period was indicated for the collection of normative information, since the test was published in 1964, it is likely that the norms are 10 or more years old. The norming sample was also biased against urban students. Only 25% of the schools included were located in cities, and the definition used for city was a population center of 15,000 or more persons. From this information it cannot be known whether any large cities were in-

Table 7

Test of Economic Understanding

	Pretest	Posttest	Change
Raw Score Mean	16.25	17.82	+1.57 *
Standard Score Mean	11.31	12.35	+1.04 *
Percentile Score Mean	15.99	18.72	+2.73

* $p < .05$ where $T > 1.68$ - The statistical test employed was a T test for correlated sample scores assuming equal but unknown variances. Confidence levels for one-tail distributions were used.

cluded in normalization. These considerations render the obtained results of limited usefulness.

The Personal Orientation Inventory is an affective instrument based upon Maslow's theory of the self-actualizing person. By this theory the self-actualizing individual is seen as "developing and utilizing all of his unique capabilities, or potentialities, free of the inhibitions and emotional turmoil of those less self-actualized." The test is composed of 14 subscales as displayed in Figure 1. Academy students were given the Personal Orientation Inventory during beginning and end of the year Workshops in Living/Group Counseling Sessions. The results are presented in Table 8. From these data it is apparent that students generally became more "self-actualized" over the course of the year with 8 of 14 gain scores statistically significant beyond the .90 Confidence Level. Figure 2 presents the Academy student score profiles compared with scores derived from a high school norming group (sample characteristics unspecified). Academy students' scores compare favorably with these normative data. It seems reasonable to conclude that Academy students progressed along the affective dimensions measured by the Personal Orientation Inventory during the course of the year, and that the resultant general profile demonstrated no significant problem areas.

Figure 1

Personal Orientation Inventory Scales

Number of Items	Scale Number	Symbol	Description
I. Ratio Scores			
23	1/2	T_I / T_C	TIME RATIO Time Incompetence/ Time Competence - measures degree to which one is "present" oriented
127	3/4	O/I	SUPPORT RATIO Other/Inner - measures whether reactivity orientation is basically toward others or self
II. Sub-Scales			
26	5	SAV	SELF-ACTUALIZING VALUE Measures affirmation of a primary value of self-actualizing people
32	6	Ex	EXISTENTIALITY Measures ability to situationally or existentially react without rigid adherence to principles
23	7	Fr	FEELING REACTIVITY Measures sensitivity of responsiveness to one's own needs and feelings
18	8	S	SPONTANEITY Measures freedom to react spontaneously or to be oneself
16	9	Sr	SELF REGARD Measures affirmation of self because of worth or strength
26	10	Sa	SELF ACCEPTANCE Measures affirmation or acceptance of self in spite of weaknesses or deficiencies
16	11	Nc	NATURE OF MAN Measures degree of the constructive view of the nature of man, masculinity, femininity
9	12	Sy	SYNERGY Measures ability to be synergistic, to transcend dichotomies
25	13	A	ACCEPTANCE OF AGGRESSION Measures ability to accept one's natural aggressiveness as opposed to defensiveness, denial, and repression of aggression.
28	14	C	CAPACITY FOR INTIMATE CONTACT Measures ability to develop contactful intimate relationships with other human beings, unencumbered by expectations and obligations

Table 8

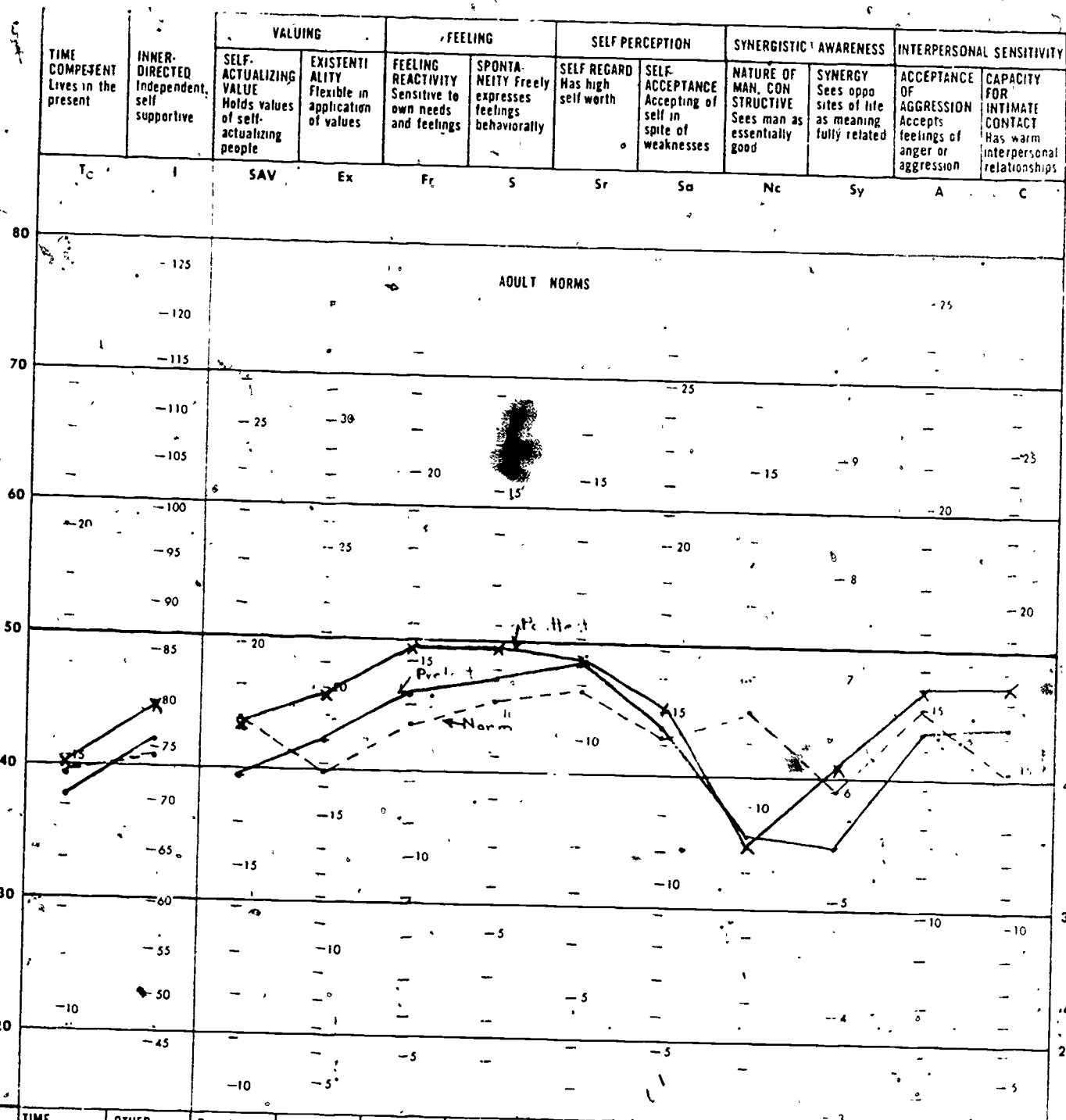
Personal Orientation Inventory

Variable	Pretest	Posttest	Change	Confidence Level
1. Time Ratio	21.43	22.82	+1.39	.69
2. Support Ratio	16.92	19.73	+2.81	.97
3. Time Competence	14.28	14.82	+0.54	.82
4. Inner Direction	75.85	79.91	+4.06	.97
5. Self-Actualizing	16.97	18.07	+1.10	.98
6. Existentiality	17.95	19.84	+1.89	.98
7. Feeling Reactivity	14.34	15.27	+0.93	.91
8. Spontaneity	10.90	11.42	+0.52	.85
9. Self-Regard	11.48	11.47	-0.01	.51
10. Self-Acceptance	14.31	15.02	+0.71	.87
11. Nature of Man	9.64	9.49	-0.15	.63
12. Synergy	5.54	6.11	+0.57	.98
13. Acceptance of Aggression	14.48	15.40	+0.92	.92
14. Capacity of Contact	16.23	17.51	+1.28	.95

The statistical test employed was a T test for correlated sample scores assuming equal but unknown variances. Confidence level refers to the statistical probability or reliability of findings. A finding with no possibility of occurrence by chance alone would have a confidence level of 1.00. The confidence levels were computed for predicted differences in one direction.

Figure 2

Personal Orientation Inventory Profile



Raw Scores	TIME INCOMPETENT Lives in the past or future	OTHER DIRECTED Dependent, seeks support of others' views	Rejects values of self actualizing people	Rigid in application of values	Insensitive to own needs and feelings	Fearful of expressing feelings behaviorally	Has low self worth	Unable to accept self with weaknesses	Sees man as essentially evil	Sees opposites of life as antagonistic	Denies feelings of anger or aggression	Has difficulty with warm interpersonal relations
Pretest	14.3	75.9	17.0	18.0	14.3	10.9	11.5	14.3	9.6	5.5	14.5	16.2
Norm	14.8	74.8	18.2	16.7	13.4	10.2	10.9	14.1	11.5	6.0	15.0	14.9
Posttest	14.8	79.9	18.1	19.8	15.3	11.4	11.5	15.0	9.5	6.1	15.4	17.5

The discussion now turns to program objectives indigenous to specific project components. These were presented in the Evaluation Model as representing basic entities, whose absence or functional failure would adversely affect the Academy program. Data relating to these objectives are drawn largely from project-specific formative instruments and reports.

1.0 Employer Systems Component

1.1 Objective - Employers will extend cooperation sufficient for the provision of career exploration and specialization.

Results - A total of 46 employers were recruited for participation in the program. They are listed by name (excluding the Chamber of Commerce and the Veterans Administration) above in the "Design" section and described above in the " Subjects" section. With 10 to 12 employers offering exploration learning activities at any one time, this provided employer-based resources for students on the basis of 1 employer for every 10 or so students. The variety of employers involved also permitted the maintenance of the cluster structure. Specializations were also developed, with a total of 10 in operation third quarter; for a listing see the "Design" section. The employer resources available were thus sufficient for the conduct of this component.

1.2 Objective - Employers will develop in the quality and quantity of their commitment.

Results - Although this is a difficult dimension to measure and there was considerable variation among employers, several generalizations may be stated. From the beginning to the end of the year the number of employers who expressed satisfaction with their involvement in the

program increased from approximately 40% to 70%. More than half of the employers also actively engaged in program revisions aimed at improvement. Only 1 employer dropped out during the course of the year; an additional 13 (28%) declined to participate in the succeeding year. Of the 14 total, 6 were not sought for continuation because their input was not considered adequate, 3 had internal reorganization problems, 2 felt that they had completed their commitment, 2 felt that the students lacked interest and motivation, and 2 needed additional resources to continue. Thus, more than two-thirds of the employers involved demonstrated a continuing interest and commitment regarding the Academy program.

1.3 Objective - Students will learn through their involvement in the program.

Results - Since it is not possible to attribute learning differentially to program areas, the gains discussed under standardized instruments apply to all program areas including Employer Systems. Student questionnaires and interviews also indicated that approximately 80% of the students were learning about new careers. These students were able to name specific jobs they learned about; most were able to identify the education and training needed; and about half also stated the salaries associated with positions. One-third of the students encountered a career that was of particular interest to them.

1.4 Objective - A World of Work Seminar can be developed and conducted with the objective of providing an overall view of exploration, information, skills, concerns and issues related to career pursuits, as well

as a forum for student discussion of these matters.

Results - These Seminars were developed and conducted by the Chamber of Commerce as a required course spanning the first three quarters. Much effort was devoted to constructing and revising this activity, but it was marked by a poor reception on the part of students. The Seminars consistently had one of the lowest attendance rates for Academy offerings. Only about half of the students saw them as learning experiences, and only one-fourth expressed a desire to attend them. When asked during the third quarter whether or not the Seminars had improved over the course of the year, only 25% agreed. Given these relatively negative attitudes, it is unlikely that the intentions for the World of Work Seminars were accomplished.

2.0 Instructional Systems Component

2.1 Objective - Instructional programs can be developed and administered to meet the students' academic needs as defined by State requirements, Academy requirements and student interests.

Results - The array of instructional activities offered during the first year was presented above in the "Design" section. As can be seen, these activities were numerous and diverse in each area. The only required area where problems were encountered was Physical Education. Despite the more than adequate variety of activities to select from, almost half of the students failed to meet the 2 hours per week attendance requirement. In all areas related to academic credit evident needs were met by the activities available. On the Student Questionnaire posttest 98% of the students indicated that their learning

activities had been interesting; 95% considered them relevant; and 86% thought that they had learned a lot as a result of their Academy experience.

2.2 Objective - Psychomotor programs can be developed and conducted to meet students' physical needs.

Results - As mentioned above a superior Physical Education program was developed, but student participation could not be effected for a large segment of the Academy student body. An assessment of psychomotor needs was planned, and most of the pretesting was completed by the Physical Education staff for placement purposes, but the absence of posttesting precluded any assessment of progress.

2.3 Objective - A Life Skills Program can be devised and conducted to promote the development of skills in interpersonal relationships, critical personal values and other dimensions to be specified by staff and students.

Results - The Life Skills Program was implemented in the form of Workshops in Living and Life Skills Specializations. The Workshops in Living were required small group sessions for all students and represented the exploration phase of this area. The Life Skills Specializations were elective offerings usually conducted on an individual basis with the student contracting for certain activities with the participating service agency. The Life Skills Program was initially a part of Instructional Systems, but during the year it was transferred to Counseling Systems. This was prompted by the increasing emphasis on counseling as an instructional activity and the replacement of the Workshops in Living by Group Counseling Sessions. In the process

this exploration activity focused less on personality development and more on conveying information and promoting skills related to both career development and Academy operations. The Workshops in Living were consistently rated very highly by students while the Group Counseling Sessions were regarded as mediocre. The Group Counseling activities were accorded a reception by students that was consistently inferior to Workshops in Living: fewer indicated that "I like participating" (73% vs. 100%); fewer thought that "They (Group Counseling Sessions) help me to think about myself" (50% vs. 96%); fewer thought that "They help me to understand other people" (40% vs. 85%); fewer agreed that "They're worthwhile" (50% vs. 85%). It is clear that with the change in organization a change in student attitude occurred. No activity-specific measurement of knowledge was included.

3.0 Student Personnel Systems Component

3.1 Objective - A student records system can be developed and maintained with the capability of responding to staff and evaluation needs.

Results - The records system which evolved was satisfactory neither for staff nor evaluation use. A comprehensive system was designed before operationalization, but it was never developed and applied. The consequence was that records and documentation occurred in a haphazard way, with components and individuals employing esoteric procedures. In some cases records within areas were sufficient for operations in that area; across areas there was no coordination. Two project functions experienced especially negative effects as a result of this: Documentation in concrete and accurate terms became difficult

because complete and reliable information was seldom available. Evaluation was also impeded because extensive data reconstruction and verification had to be completed before any evaluation could be attempted.

3.2 Objective - Student Counselors (Developmental Advisors) will be available to advise students on career, academic and personal matters to the students' satisfaction as they progress through the Academy.

Results - A great deal of resource was devoted to this objective, with 1 counselor for every 30 or so students, and the activity was successful. Throughout the year the counseling program was rated by students as one of the best aspects of the Academy. In response to specific questions, approximately 92% of the students indicated that "They helped me solve problems"; 95% said that "I had as much time as I needed"; 75% thought "They helped me make career or educational decisions"; and 90% indicated "I get along well with my Developmental Advisor".

3.3 Objective - The student Personnel System will be able to adequately place students in careers, post secondary education or another secondary school upon their separation from the Academy.

Results - Although no students graduated from the Academy, since all were juniors, 30 students were either dismissed or decided to leave. A follow-up liaison with the public schools was established for each student who planned to return to another secondary school. It was, however, often difficult to trace exactly what happened to students due to their elusiveness and the state of affairs of public school records. In any case, no significant reentry problems were detected or suspected.

4.0 Management Systems Component

4.1 Objective - The Academy facilities and resources will be adequate for staff and student purposes.

Results - Although Academy resources were indicated as adequate without notable exception, the Academy facilities were the object of continual complaint. The facilities were rated the poorest aspect of the Academy by both students and staff. Although some of the objections were spurious, many were legitimate, underlining the difficulty of obtaining qualified private facilities for educational uses.

4.2 Objective - The Academy administrative systems will adequately serve staff and student needs.

Results - This referred to such functions as grading, credits, attendance and scheduling. Each of these administrative activities was more time-consuming and difficult than was anticipated. In some cases the lack of a coordinated records and documentation system added further complications. Sometimes the systems employed were particularly problematic for evaluation staff. Examples of this were the assignment of different configurations of credit hours for the same course, lack of explicit rationales and delays in information preparation. In general the systems functioned adequately for students, few complaints or conflicts having been observed.

4.3 Objective - Students will develop in positive attitude toward learning, positive self concept and positive attitude toward Academy experiences.

Results - As indicated above under standardized tests, the self concept pretest measure indicated no need for improvement since the Academy

student scores were similar to normative figures. Results from the Student Questionnaire directly reflected student attitudes. Although only 31% of the students thought the Academy was "as good as (they) had hoped it would be", 83% saw it as better than their previous school. A total of 81% liked attending the Academy; 98% indicated that their learning activities were interesting; 86% thought that they had learned a lot in the Academy program. Attitudes toward specific learning activities varied widely from activity to activity. Those noteworthy due to exceptionally high or low student regard have been discussed under the appropriate component areas.

Each of the objectives discussed above has been covered only in a summary manner. The extent of formative data gathered permitted several approaches to most of the issues raised. The approach presented was selected on the basis of perceived representativeness of the data, illustrative value and comprehensibility.

The last section of "Data Analysis" deals with issues which were not explicit in the Evaluation Model, but which became a special interest during the year. The first of these is student attrition:

Between the opening of the Academy and August 6, 1973, thirty (30) students had left the Career Education Program either by dismissal or voluntary withdrawal. This constituted a 28% rate of attrition covering the school year and approximately half of the summer. Of these thirty (30) students, thirteen (13) voluntarily withdrew with the following intentions:

1. 8 students planned to return to their old school or another secondary school

2. 3 students intended to quit school altogether

3. 1 student was getting married

4. 1 student moved out of the area and presumably would resume schooling in a new location

Seventeen (17) students were dismissed from the Academy; their plans were as follows:

1. 3 students intended to return to another secondary school

2. 14 students' intentions were not known at the time of last interview

These students were dismissed for the following reasons:

1. 11 due to exceptionally poor attendance and low motivation regarding the Academy program

2. 4 due to behavior problems and associated poor attendance

3. 2 due to insufficient credits and refusal to attend the fourth quarter.

Exit interview forms were available for only ten (10) of the students who had left the Academy. Although these accounted for only 30% of the total, counselors felt they were representative, and a summary review seemed warranted. Of these ten (10) departing students, only three (3) left the Academy in favor of another school. Of these only one (1) was expressly dissatisfied with the Academy, while the others felt that they could better fulfill their needs at their old schools. The remaining seven (7) students left the Academy for reasons not directly related to its program, i.e. they probably would have dropped out of any school, and perhaps the Academy postponed that action for one year.

Students left the Academy as follows during the quarter sequence:

1.	First Quarter	–	4 students
2.	Second Quarter	–	10 students
3.	Third Quarter	–	4 students
4.	Fourth Quarter	–	12 students
			30

The characteristics of the students who were separated from the Academy and those who remained enrolled were compared. Tables 9 and 10 present these data. There was no observed difference between the two groups with regard to sex and type of school previously attended. With reference to ethnic group membership, the separated group was 50% Black, while the remaining group was 66% Black. This caused a shift from 61% to 66% Black for the Academy student body.

Examining the separated group's past school performance, it is evident that they did not do as well as the remaining group in their sending schools. The separated group had an average attendance rate of 84% and an average GPA of 68, compared with figures of 89% and 75 for the remaining group.

In terms of measured intelligence and basic skills achievement (Academy administered), the separated students had somewhat lower scores than the remaining students. The average IQ score for the separated group was 92.2, while the same statistic for the remaining group was 98.0. Likewise, the Comprehensive Tests of Basic Skills scores for the separated group were uniformly lower than those of the remaining group. Specific mean scores for the CTBS pretest in grade equivalents are presented below:

Table 9

Students Separating From The Academy

# of Students	Student #	Date Withdrawn
1	1006	11/22/72
2	1028	12/1/72
3	1002	12/5/72
4	1049	1/1/73
5	1041	1/16/73
6	1018	1/19/73
7	1011	2/2/73
8	1105	2/12/73
9	1083	2/15/73
10	1106	2/21/73
11	1045	3/19/73
12	1099	3/29/73
13	1030	3/29/73
14	1103	3/29/73
15	1031	4/13/73
16	1038	4/13/73
17	1107	4/13/73
18	1019	4/13/73
19	1005	7/9/73
20	1013	7/9/73
21	1025	7/9/73
22	1032	7/9/73
23	1048	7/9/73
24	1073	7/9/73
25	1074	7/9/73
26	1085	7/9/73
27	1089	7/9/73
28	1090	7/9/73
29	1086	7/20/73
30	1012	7/25/73

Table 10

Compared Characteristics of Separated and Remaining Academy Student Groups

Variable	Separated Group #	Separated Group %	Remaining Group #	Remaining Group %
I. Quarter				
A.1	4	4	104	96
B.2	14	13	94	87
C.3	18	17	90	83
D.4	30	28	78	72
II. Sex				
A. Male	15	50	39	50
B. Female	15	50	39	50
	30	100	78	100
III. Ethnic Group				
A. Black	15	50	51	66
B. White	14	47	27	34
C. Other	1	3	0	0
	30	100	78	100
IV. Sending School				
A. Public	22	73	56	72
B. Parochial	5	17	18	23
C. Private	1	3	1	1
D. Not Available	2	7	3	4
	30	100	78	100
V. Academy QI Grades				
A. High	2	7	–	–
B. Mid	13	43	–	–
C. Low.	11	37	–	–
D. Dropped	4	13	–	–
	30	100		

Variable	Separated Group #	Separated Group %	Remaining Group #	Remaining Group %
VI. Academy Q2 Grades				
A. High	2	7	–	–
B. Mid	6	20	–	–
C. Low	9	30	–	–
D. Dropped	13	43	–	–
	30	100		
VII. Academy Q3 Grades				
A. High	1	3	–	–
B. Mid	5	17	–	–
C. Low	6	20	–	–
D. Dropped	18	60	–	–
	30	100		

	Remaining Students	Separated Students	Mean Difference
1. Reading	9.1	8.7	- .4
2. Arithmetic	8.0	7.2	- .8
3. Language	8.4	7.3	- 1.1
4. Total Battery	8.2	7.5	- .7

An examination of the grades achieved at the Academy revealed that the separated students performed less well than the remaining students. This should be expected since seventeen (17) of the thirty (30) were dismissed. When obtained grades were divided into High (A or B), Mid (C), and Low (D or F) groups, it became apparent that few separated students had high grades during any quarter. Remaining students attained overall average grades in the C+ range across quarters while separated students earned overall average grades in the D range during the same period.

A review of attendance rates at the Academy indicated that separated students were also lower than remaining students in this category. The separated group evidenced average attendance rates of 81%, 82%, and 81% for the first, second and third quarters respectively. Similar figures for the remaining group were 86%, 88% and 85%.

In summary the students who separated from the Academy during the first project year (n=30) exhibited some similarities and some differences when compared with the students who remained in the Academy program (n=78). The two groups were similar with regard to sex group membership and types of sending school, but different in racial composition. Students who left the Academy were consistently lower than students who remained enrolled on all available performance measures including sending school attendance and grades, IQ scores, basic skills scores and Academy attendance and grades.

Another point of interest was the cost of operating the Academy program. In that an effective cost tracking system was not available in FY 1973, sophisticated cost analyses could not be undertaken. The data presented below are based on the project's financial statement as of the end of the contract year. This statement contained a description of all project expenditures and encumberances as of August 31, 1973. The contract was for a 14.5 month period. Operational costs were determined for the twelve month period beginning September 1, 1972 and ending August 31, 1973. These costs were allocated over major operational component areas as follows:

1.	Administration of Program Operations	$ 137,158
2.	General Education	117,395
3.	Explorative Education	99,902
4.	Specialized Education	37,146
5.	Guidance and Counseling	79,527
	TOTAL	$ 471,128

It was not possible to detail costs by task or the learning activity classifications used elsewhere in this report. Broadly speaking, General Education includes those activities described under Instructional Systems; Explorative Education includes Career Exploration and Life Skills Exploration; Specialized Education includes Career Specialization and Life Skills Specialization.

Several staff perceived problems were indicated by results from the Staff Evaluation Reports. Some of these concerned students, e.g. lack of motivation, lateness for class, attendance problems. But the most serious problem was a polarization which seemed to occur between the

operational staff and the developmental staff (including management). This was reflected in complaints centering on poor staff relationships, unclear policy implementation, lack of authority of operational staff and lack of administrative support. (The syndrome was seen from the operational staff point of view since they were the respondents to the evaluation questionnaire.) It may have also been reflected in the 35% rate of staff turnover during the year, although data on expected rates for this type of project are not available. In any case, there were apparent staff dissatisfactions. Many operational staff members felt that critical decisions were being made by administrators and developers who didn't have extensive first-hand experience with the students, and that they (operational staff) weren't being adequately supported in the fulfillment of their responsibilities. On the other hand, although formal data were not gathered, it seemed that many developmental staff felt that work on pressing operational problems hindered progress in their developmental mission. This polarity of perceptions seems to originate in the fact that the project had discrete operational and developmental goals and staff with no prevailing rationale integrating the two. It was fostered by a physical separation of the operational staff at the Academy site and the developmental staff at the Research for Better Schools offices. It was intensified by the demanding time schedule for operationalization, which did not permit testing and refinement of systems before implementation. The pressure for "getting things done" often did not allow time for the internal communications and soliciting of staff members' input which foster an atmosphere of unity and coordination of purpose. Some of the

ingredients in this situation are simply facts of federally-funded experimental project life; these require an accommodation of the individual to the circumstances, but the circumstances must be made clear and held in awareness. Other ingredients are internal structure and communications systems; these must be developed as much as possible to diminish the problem by informing staff and encouraging their input.

As mentioned above, the utilization of evaluation results was not systematically documented during the first project year. The evaluation results were discussed in the weekly Project Cabinet Meetings and action was often initiated as a consequence. Since the evaluation effort involved much basic documentation activity, evaluation output was also used in project monitoring and description. Initially all evaluation reports were disseminated to all staff. During the year, in recognition of the reports' technical nature, abstracts were prepared for general dissemination and reports were available by request. Since the abstracts contained enough information for general knowledge purposes, but not enough for use in program development, it was thought that the patterns of requests might indicate something about the actual utilization of evaluation results by staff. For the 16 reports disseminated in this manner an average of between 4 and 5 copies of each full report were requested (excluding the copies which automatically went to the Project Director). The number requested ranged from 1 to 8. Regarding the 12 reports which covered a specific component area, in 8 instances the person(s) responsible for that area requested reports. Each staff member requested an average of between 3 and 4 reports; with the range

extending from 0 to 12. This would suggest that the evaluation results were used by staff in some manner, but there is a lot of room for improvement. Both the tailoring of reports for staff utilization and the documentation of impact remain in need of attention.

Recommendations

Based on the first year experience it seems clear that employers in the Philadelphia area are willing and able to successfully provide the learning activities which have been termed Career Exploration and Specialization. All of the overt criteria for conducting these educational experiences for Academy students (n=107) have been met. Students manifest generally positive attitudes toward them, and seem to be learning in the process. The exact nature and extent of the knowledge conveyed or development fostered can only be surmised at present, and remain issues for future investigation. It is also clear that the remaining elements necessary for a comprehensive educational program can be constructed using resources drawn from agencies and individuals in the community, as well as staff from the Career Education Project and Research for Better Schools. It appears that such a program can affect traditional achievement areas as well as the public schools, while presenting learning experiences which are not available in the public schools. The answer to the very basic question, "Can it be done?", is thus affirmative.

The maximum feasible involvement of employers has not yet been tested. The first year experience has led to the conclusion that employer responsibility for the total educational program might be possible experimentally, but would have limited practical applicability. Hence future planning includes the public schools as a cooperating agency, while the employer base is broadened to include direct responsibility for all career instruction and guidance activities. The test of these conditions, with only Basic Skills instruction conducted by project staff, moves significantly closer to the preparation of a replicable model.

The outcomes will be a major determinant of future direction.

Analysis of the first year has also demonstrated that subgroups of students, as defined by demographic and background characteristics, did not benefit differentially from the program. There is thus no basis for delimiting a target population on the grounds of expected effect.

Several specific problems or issues suggested by the evaluation effort during the first year have resulted in recommendations aimed at improving particular aspects of the program.

Student progress in basic skills may have been relatively adequate, but it was certainly not exemplary. Many employers and other instructors commented that they could have accomplished much more if students' reading and mathematics levels had been closer to their expectations. Activities aimed at enhancing these skills should be concentrated on and the relatively poorer performance in mathematics should be investigated as an indication that more emphasis is needed in this area.

The World of Work Seminar seemed to be unsuccessful regardless of the program alterations which were attempted. Another means of presenting the materials and interaction forum involved should be developed.

The Physical Activities Program sounded good but fell on many deaf ears. It was planned and executed well, but students simply didn't show much interest. If this area is to remain a priority, it will have to be extensively reworked to assure meeting stated criteria. If its relative importance is seen as not justifying the investment, then the performance criteria should be adjusted.

The experiences provided by the Workshops in Living seemed to be of value to students; whereas, the replacement (Group Counseling) was

less enthusiastically received. A way of filling this gap for students should considered.

An integrated and coordinated approach to records and documentation systems needs to be developed and implemented. Direction should come from a single source. Since the evaluation staff has to deal with the results, and since they have some expertise in the area, it is suggested that this become an evaluation function.

A more sophisticated approach to cost accounting needs to be developed and implemented as a precursor to cost-benefit studies. This system must be comprehensive and capable of assigning costs to functions. The cost tracking system should be closely tied in with the evaluation process, where cost is an input variable, and the specifications process, where cost is important for projections.

The problem of staff factionalization is an important and difficult one. Although the reorganization into teams having both operational and developmental responsibilities may help, the separateness of the Chamber of Commerce staff and the Academy functions in their domain may hinder communications and information dissemination. A comprehensive orientation of new staff, and perhaps old staff as well, should be conducted to assure an understanding of purpose and direction. Mechanisms for the interaction of Chamber staff and Research for Better Schools staff should be established. Particular importance should be accorded the team meetings, where information from the Project Cabinet may be discussed and staff input sought.

The final topic concerns the monitoring of evaluation results utilization. The system of abstracting reports for general dissemination will be continued. Reports will be written to address specific project

areas, and they will be written to meet the developmental needs in the area concerned. An effort will be made to define the problems evidenced and suggest needed changes. Technical discussions will be minimized in the formative reporting and confined mainly to summative documents. A follow-up record on each report will include actions taken as a consequence of the results presented and developers' suggestions for further analysis or investigation.