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ABSTRACT

The Experience-Based Career Education (EBCE) model being developed and tested in four regions of the United States, under the sponsorship of the National Institute of Education, reflects a nationwide interest in discovering new ways to help adolescents handle the psychological, social, and economic complexities of modern life. This paper reports the attempts to integrate and apply diverse research methodologies needed to evaluate an individualized experience-based program. Problems encountered in undertaking the evaluation of the EBCE Project called Community Experiences for Career Education (in Tigard, Ore.) and the results of the second-year evaluation there are discussed in this presentation. (Author)

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EVALUATION OF THE
COMMUNITY EXPERIENCES FOR CAREER EDUCATION PROGRAM

by

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EVALUATION OF THE
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Community Experiences for Career Education--(CE)₂

Community Experiences for Career Education, (CE)₂, is one of four Experience-Based Career Education (EBCE) programs being tested under the auspices of the National Institute of Education. Operated in Tigard, Oregon by a nonprofit community corporation, the program has been developed by the Northwest Regional Educational Laboratory (NWREL). During the 1973-74 school year (CE)₂ operated with 50 high school juniors and seniors and 7 professional staff members providing a comprehensive high school education through experiences in the community.

A primary goal of the (CE)₂ program has been to integrate a student's knowledge of a variety of careers with the acquisition of cognitive, interpersonal and affective skills through a series of planned experiences with identified learning outcomes. Emphasis is placed on the student assuming responsibility for his or her own learning.

Four characteristics, taken together, make (CE)₂ different from other alternative or career education programs.

1. The learning program evolves from adult activities in the community. It is reasoned that if the learning activities are based directly on current adult tasks and roles in the community, the learning goals will be recognized by the students as relevant in preparing them for the transition to adulthood.
2. The program is based on experiential learning, meaning that students are actively involved in the daily work of community life. The "hands on" approach to learning has long been recognized as an effective learning strategy. Experience-based career education is attempting to implement this approach in a comprehensive program.
3. The curriculum of (CE)₂ is fully integrated. Just as the salesman or foreman does not think of his interactions with people in terms of grammar, vocabulary or psychology, the (CE)₂ curriculum also applies no artificial distinction between the "disciplines."
4. (CE)₂ is a fully individualized program. The learning goals as well as the learning strategies are varied to meet the needs, interests and abilities of each student.

The (CE)₂ curriculum is divided into three skill areas: Basic Skills, Life Skills and Career Development. The Basic Skills area involves the traditional "three Rs," reading, mathematics and communication. The Life Skills encompass student development in critical thinking, science, personal and social development, functional citizenship and creative development and include certification of student competency to perform 13 "survival skills." Career Development skills include the student's acquiring a better knowledge of himself and of career requirements and an ability to match the two.

A variety of learning strategies are employed to help students attain individual objectives under the umbrella of broad curriculum goals in the areas of Life Skills, Basic Skills and Career Development. These strategies include: individually-negotiated student projects (completed on community sites as well as at the (CE)₂ learning center); Exploration Packages (guides to help the student investigate new career interests); learning levels (generally one to four month placements at a particular employer site to gain firsthand experience with the job, the employer site or a given topic to be explored as a project); competencies (community certified "survival skills"); weekly student journals (in which students communicate in writing with a staff member their observations and feelings); and tutors and programmed texts as needed to help in improving Basic Skills.

Evaluation of the Program

A comprehensive formative and summative evaluation of this program has been conducted by the EBCE evaluation staff of the Northwest Regional Educational Laboratory in Portland, Oregon over the past two years. This evaluation, while focusing on student learning, has also examined other areas such as program management, and employer and community involvement. This presentation, however, concentrates on the evaluation of student outcomes. Evaluation strategies used, methodological problems encountered and evaluation findings are presented.

Because the (CE)₂ project was designed to achieve a wide range of cognitive and affective objectives in an individualized manner, the evaluators realized that no single research methodology would be adequate. Therefore, a combination of various methodologies was employed under the assumption that the weaknesses of any one method would be counterbalanced by the strengths of another. This combination of research methodologies included traditional achievement and attitudinal testing of students in a quasi-experimental design, student case studies, unobtrusive measures and a model borrowed from the legal profession called an adversary hearing.

A quasi-experimental design was used to make comparisons of group data from (CE)₂ students with students in selected comparison groups. The number of students who volunteered for (CE)₂ for the year was not sufficiently large to assign students randomly to the experimental or control groups and thus precluded the use of a true experimental design.

Fifty juniors and seniors participating in (CE)₂, all volunteers from the local high school, made up the experimental group.

The comparison groups included: a random sample of 50 juniors and seniors from Tigard High School (THS), all the students (25) in the Diversified Occupations class of the Cooperative Work Experience (CWE) program at Tigard High School and a random sample of 100 students from an occupational skills center (OSC) in a neighboring district. None of these groups was intended to serve as a "control" group in the strict sense of the word, but it was felt that each would provide data for meaningful comparisons. For example, the random sample from THS was used to determine the extent

to which (CE)₂ students were similar to, or different from, the "average" THS student and to collect data with which to compare (CE)₂ student growth in Basic Skills. Data from the CWE program was used to determine relative growth of (CE)₂ and CWE students in career development areas. And data from OSC provided comparisons with students in a highly structured vocational skills center.

Data from both standardized and locally-developed instruments were collected from the experimental and comparison groups. They included:

1. the Comprehensive Test of Basic Skills (CTBS) to measure achievement in the traditional areas of reading, language, arithmetic and study skills
2. the Career Maturity Inventory (CMI) Attitude Scale to measure attitudes toward the world of work
3. the Psychosocial Maturity Scale (PSM) to measure maturity in the broad areas of individual and social adequacy and interpersonal communications
4. a Student Demographic Questionnaire to record personal background and family information, recent activities in high school and in the community and reasons for joining (CE)₂

Other survey instruments used to collect data from students in the (CE)₂ program and from their parents and participating employers were:

1. a semantic differential to measure student attitudes toward the concepts of Me, Work, Decision Making, School, Learning and Adults
2. the Student Opinion Survey to measure student attitudes toward the program
3. the Parent Opinion Survey to measure the attitudes of parents of participating students
4. the Employer Questionnaire to collect information on employer participation and to measure employer attitudes toward the program

A case study methodology was employed to integrate the variety of information that was being collected and to capture and document the program's capability to deal effectively with the individual. The case studies of two students were conducted in a "post hoc" manner, utilizing data from the extensive recordkeeping system of (CE)₂ and supplementing these data with interviews with the two students.

A variety of unobtrusive measures were used to ascertain the extent to which different program strategies were being utilized. These measures, mostly gleaned from the program recordkeeping system, provided useful formative evaluation data on a continuing basis, to the program staff and alerted the evaluators to certain issues requiring a more in depth investigation.

The adversary hearing approach was utilized as an attempt to integrate and interpret the evaluation findings in a way maximally useful for potential adopters of the (CE)₂ program. Two advocates collected evaluation data and human testimony to support or reject the contention that (CE)₂ should be adopted by local districts. A prototype of the mock trial proceedings, including the testimony and cross-examination of four witnesses, was videotaped and used with various audiences.

Findings

It was not a goal of (CE)₂ that its students make greater growth in Basic Skills than a random sample of students at Tigard High School--only that they not make significantly less growth. Summary data from the pre- and postadministration of the Comprehensive Test of Basic Skills (CTBS) are displayed in Table 1.*

Table 1

SUMMARY OF DATA ON PRE- AND POSTADMINISTRATION
OF THE COMPREHENSIVE TEST OF BASIC SKILLS

CTBS Subscore	Groups Tested											
	Tigard Juniors N=25				(CE) ₂ Juniors N=10				(CE) ₂ Seniors N=23			
	Pre		Post		Pre		Post		Pre		Post	
	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S	\bar{X}	S
Reading	64.5	11.4	65.9	12.3	52.4	14.6	52.3	19.3	52.7	13.1	56.7	13.2
Language	62.6	9.6	61.4	11.9	50.0	14.1	54.2	14.6	51.4	14.0	53.2	15.0
Arithmetic	69.4	16.7	67.0	18.6	54.4	20.0	60.0	23.7	47.7	16.0	56.8	17.0
Study Skills	33.0	6.6	34.6	6.8	23.0	11.0	30.5	11.8	26.3	9.2	30.0	7.5

* Because of questions concerning the representativeness of the seniors in the THS sample, only scores from the THS juniors are presented for comparison.

A series of four t-tests for matched data was run on the combined (CE)₂ student CTBS data. A summary of this analysis is included in Table 2.

Table 2

(CE)₂ STUDENT CTBS PRETEST--POSTTEST DIFFERENCES

Subtest	Mean		Gain	t Value
	Pretest	Posttest		
Reading	52.6	55.3	2.8	2.37*
Language	51.0	53.5	2.5	1.32
Arithmetic	49.7	57.8	8.1	3.98**
Study Skills	55.3	30.1	4.8	2.90**

* $p < .05$

** $p < .01$

It is noted that statistically significant growth occurred on each CTBS subtest except Language. This is especially significant when compared to (CE)₂ student growth in Basic Skills during the first year of program activities in 1972-73. During that year no growth in Basic Skills was detected using the CTBS.

To compare (CE)₂ student growth in Basic Skills with that of the comparison groups, a univariate analysis of covariance was run on each of the CTBS subscores. Pretest scores were used as the covariates. The analysis was run comparing THS juniors both with the (CE)₂ juniors and with the total (CE)₂ student population. No significant differences were found in either analysis. In other words, the (CE)₂ students gained as much in Basic Skills as did the THS students.

The CMI and PSM were administered to all students in the fall and to random halves of each group at midyear and at the end of the year. This split schedule of posttesting was implemented to investigate findings from the previous year that indicated rapid positive affective change during the first semester and relatively little change during the second half of the year. The differences between pretest and midyear for all groups on the CMI were almost nonexistent. The overall year change (pretest-posttest) is summarized in Table 3.

Table 3

PRETEST AND POSTTEST MEANS AND STANDARD DEVIATIONS
ON THE CAREER MATURITY INVENTORY ATTITUDE SCALE
FOR (CE) 2 AND THE COMPARISON GROUPS

Scale	Groups Compared						
	(CE)2 N=15		THS N=18		OSC N=30		
	Pre	Post	Pre	Post	Pre	Post	
CMI Attitude	\bar{X}	32.1	36.4	36.7	36.4	36.1	38.3
	S	7.87	4.22	4.32	7.63	6.27	4.93

A t-test for correlated data, run on the (CE)2 students' CMI scores, yielded a t of 2.71 which is significant beyond the .02 level, indicating a positive growth for the year as measured by this instrument. Neither comparison group made a significant change over the year.

An analysis of covariance (with the pretest score as the covariate) run on the data indicated that differential growth among groups was not significant.

A very different pattern of change and one that seemed to confirm the earlier stated hypothesis was indicated by the results of the PSM. During the first half of the year all groups showed evidence of significant positive change in the areas of individual and social adequacy and communication. During the second semester this change was tempered by a reduction in the rate of growth or by a slight drop from the midyear peak.

Pretest and posttest scores for the two groups of (CE)2 students tested at midyear and at the end of the year are summarized in Table 4.

Table 4

SUMMARY DATA ON THE PRETEST, MIDYEAR TEST,
POSTTEST OF THE PSYCHOSOCIAL MATURITY SCALE FOR (CE) 2 STUDENTS

Scale	Group					
	Group 1			Group 2		
	Pretest	Midyear	t	Pretest	Posttest	t
Individual Adequacy	80.6	89.1	2.67*	76.9	87.8	4.38*
Communication	78.7	87.3	4.14*	75.1	85.1	3.66*
Social Adequacy	90.5	108.6	6.07*	97.1	98.9	.44

*p < .01

Statistically significant growth was demonstrated on all scales during the first half of the year and on the Individual Adequacy and Communication Scales over the whole year.

A multivariate analysis of covariance on the data from all groups did not show significant differences between groups in the rate of change but did indicate that both the THS and OSC random samples had scores that were higher overall than those of the (CE)₂ students.

A similar pattern of attitudinal change was indicated by a semantic differential designed to measure attitudes toward the concepts of Me, School, Adults, Learning, Work and Decision Making. This instrument was administered to all (CE)₂ students in the fall, at midyear and again in May. (CE)₂ students demonstrated a significant gain in attitude toward each concept between the beginning and end of the first semester. As with the PSM, the second semester gains on the semantic differential leveled off. Comparing gains between the beginning and end of the full school year, however, revealed significant positive change in attitude only toward the concepts of School, Me, Learning and Decision Making.

Questionnaire data from students indicated very positive opinions about the (CE)₂ program. Only one of the fifty students in the program reported that if he had it to do over, he would not participate in this career education program. Ninety-six percent of the students felt that, in comparison with the regular school program, the (CE)₂ program provided more opportunity to learn about careers. Seventy-four percent thought (CE)₂ provided more opportunity for general learning than did the traditional school (21 percent rated it about the same).

Parental opinion about the program followed the same trends as student opinion. Only one parent indicated some hesitancy about wanting his son or daughter to participate in (CE)₂ if he had it to do over (and this parent was not sure he would be against the program). Ninety-six percent of the parents thought (CE)₂ gave students more opportunity to learn about occupations and 92 percent thought it provided more opportunity for general learning. And 83 percent of the parents found their son or daughter more motivated to learn in the (CE)₂ program.

All the participating employers surveyed indicated that they would recommend participation in (CE)₂ to fellow employers. Personnel at only one employer site reported negative reactions by employees to the presence of (CE)₂ students and about one-half of the employers felt the program had increased the employees' awareness of youth. In response to a question of what students can learn on job sites that they cannot learn in a regular classroom, over 50 percent of the employers responding cited the students' opportunity to gain first-hand knowledge of job demands in a realistic situation.

Students, staff, parents and employers were each asked to rate the importance and, separately, the effectiveness of the program in accomplishing 15 student learning outcomes. Each of these learning outcomes was given an average importance rating of 3 or higher (on a 5-point scale) by students, staff parents and employers--thus indicating

support for the goals of the program. All four groups considered the following learning outcomes to be especially important for (CE)₂ students: assuming responsibility for themselves, making decisions and following through, communicating with others in a mature way, working with others, thinking through and solving problems, having a realistic attitude toward self, having a positive attitude toward work and learning, and improving interpersonal and social skills.

The students, staff, parents and employers gave an average rating of 3 or higher (on a 5-point scale) for effectiveness of 11 of 15 student learning outcomes listed. These groups felt the following student outcomes were being accomplished most effectively: performing specific occupational skills, assuming responsibility for themselves, communicating with others in a mature way, working with others and having a realistic attitude toward self.

Case studies of two (CE)₂ students were prepared as a part of the evaluation. The purposes of the case studies were to give insights into the (CE)₂ program that could not be gleaned from quantitative group data and to explore hypotheses that might later be tested on a more formal basis.

Three criteria were used to select students for the case study. The first criterion specified that one member of each sex be represented. The second criterion required that both students be at least moderately successful in the (CE)₂ program. This was done to insure that the case study describe intended student-program interactions. The final criterion required that one student be a junior and one a senior.

File data were collected on two (CE)₂ students: one, whom we shall call Kari, was in the program for a year and a half and graduated; and one, Mike, spent one year in (CE)₂ as a junior. These data (including test scores, questionnaires, student projects and resulting products, and other performance records) were analyzed and organized by a member of the evaluation team. Charts were then prepared to show the chronological sequence of activities of each student during the school year. These activities, with background and test data, were then organized in narrative form.

Copies of the draft case studies were given to the two students, who were asked to read them and verify their accuracy. Interviews with the two students were then conducted to fill in any gaps in information and to provide more of the human element than could file data.

Each case study included a description of the background of the student, why the student entered the (CE)₂ program, activities and progress while in the program and student reactions to (CE)₂.

The first student, Mike, began the (CE)₂ school year with low self-confidence, deficiencies in reading and communications skills, and above average ability and interest in mathematics. His long range goal was to become a computer operator.

Mike's early (CE)₂ experiences were marked by tardiness and lack of commitment. He did not apply himself well at an elementary school where he worked for three and one-half months. During the second semester, however, he had the opportunity to work at a local bank where he dealt firsthand with computers and computer programming. His attitude and performance changed markedly. His motivation and punctuality improved drastically. He read about computers and worked closely with his employer instructor. Both his self-confidence and his oral communication skills improved.

The Life Skills projects that Mike completed during the year were designed to alleviate his lack of communications skills and self-confidence and to build on his interest in math and technology. His Canadian heritage became the impetus for a project on immigration laws and his German ancestry influenced him to take a course in German at Tigard High School.

Mike felt that his big accomplishments for the year included a strengthened interest in computer technology and determination to find a career in that area. His personal appearance and self-confidence improved greatly and he reports with pride that he can now speak up in groups. And, while prior to (CE)₂ Mike never did unrequired reading but found TV his favorite pastime, he reports that he read eight books this past summer and has begun a hobby of collecting computer books and materials.

The other student, Kari, an above average student at Tigard High School, entered (CE)₂ primarily because she saw the traditional high school curriculum as irrelevant. Despite opposition by her parents and friends, she was determined to try the (CE)₂ alternative.

Kari's initial experiences in the program fulfilled her worst expectations. She was bored by the initial inactivity and frustrated by the often detailed requirements of the program. She remained critical of many of the requirements of the program although she finished all requirements for the first year and returned for the second despite parental pressure to return to a more traditional high school setting. Her parents felt the program needed more organization.

Her second year at (CE)₂ was marked by fluctuations both in her mood and performance. She began the year with enthusiasm and completed seven projects during the fall semester. At midyear, however, she again became disenchanted with what she was doing and her productivity dropped off. A noncommittal attitude and lack of follow through on her commitments were observed by the staff. A number of staff counseling sessions were held with her to help her better cope with various changes in her life. By February she had regained her excitement and became heavily involved in her learning level experiences.

Kari's big accomplishment at (CE)₂, in her opinion, was her "growing up." Both she and the staff recognized in retrospect that her ups and downs were symptoms of the normal transition from teenager to adulthood. They feel that she made the transition well. Kari's second major accomplishment was a decision about a career. At the beginning of her senior year she was undecided about further education beyond high school but her

experiences solidified in her mind her interest in secretarial work and in work as a telephone operator. After completing her (CE)₂ program requirements in early May she began a permanent position with the telephone company as a telephone operator, a position in which she gained experience on one of her learning level placements.

Conclusion

(CE)₂ has now completed two full years of operation as an alternative career education program for high school juniors and seniors. This approach provides an integrated and comprehensive learning program through individualized activities both in a learning center and in the community. The main tenet of the program is that learning through direct experience is more effective than learning through vicarious experience.

The program has demonstrated important accomplishments. Program participants have reacted favorably toward it. The students see the program as relevant and exciting and have demonstrated a renewed interest in their own education. Parents confirm this new level of motivation exhibited by their sons and daughters and are impressed by the learning opportunities made available to them. Participating employers have found the program beneficial both to the students and to the participating companies and, on the whole, give their enthusiastic support.

Measures of student outcomes from the program are also encouraging. Students made significant gains in Basic Skills and when (CE)₂ scores were compared with regular high school scores, there was no evidence that this alternative experience-based program penalized the student in reading, arithmetic or communication. Students also demonstrated significant growth in their attitudes toward themselves and in measures of individual adequacy. They also gained in their relationships and interactions with others. They became more positive toward school, learning and decision making, and in the area of career maturity demonstrated a significant positive change in their attitude toward work.

The program is currently in its third year of operation at Tigard and preparations are now being made to add, through local district funding, other replication sites in three states of the Pacific Northwest.