1985

The national impact of Experience Based Career Education upon 1978-1982 graduates

Janet Ahlman McMahl

Iowa State University

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THE NATIONAL IMPACT OF EXPERIENCE BASED CAREER EDUCATION UPON 1978-1982 GRADUATES

Iowa State University

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300 N. Zeeb Road, Ann Arbor, MI 48106
The national impact of Experience Based Career Education upon 1978-1982 graduates

by

Janet Ahlman McMahill

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY
Department: Industrial Education and Technology
Major: Industrial Education

Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

For the Major Department

Signature was redacted for privacy.

For the Graduate College

Iowa State University
Ames, Iowa
1985
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CHAPTER I. INTRODUCTION

The determination of appropriate occupational needs and interests of students in American schools is a complex and vital issue of the 1980's. Administrators, curriculum directors, and teachers of general and vocational education continually review the relationship of their respective curriculum offerings to the life and learning of the students they serve. A major change in the way that teachers relate curriculum to students' lives has come from the movement called Career Education. Since U.S. Commissioner of Education Sidney Marland (1974) delivered an address that called for major educational reform, the movement called Career Education has been researched and subsequently delivered to a great number of the nation's youth.

One aspect of Career Education is the critical life component called career development. Career development is a continuous process of making career decisions based on the individual's experiences and interactions. It involves such issues as a child's first impression of the working world, the adolescent's consideration of vocational alternatives, or the adult's decision to change careers in mid-life. Using the work of early psychologists such as Buehler and emerging career theorists such as Super (1960), and Ginzberg, Ginzberg, Axelrod, and Herma (1951) have divided the career development process into three stages: career awareness, career exploration, and career preparation. Career awareness is the stage where a learner becomes aware of self physically, socially, emotionally, culturally, and mentally and then develops competencies
in coping with other members. During this phase, the learner develops understandings of and appreciation for work, the value of the worker, and the role of work and the worker in a society. The awareness phase normally takes place from birth to approximately the junior high school age.

During the exploration phase, the learner continues to develop by comparing personal characteristics with the knowledge gained from the exploration of careers. The learner begins to identify occupational areas that most closely align with his or her self concept. This phase takes place from junior high school to approximately the junior year of high school. At this time, youth need access to a wide variety of exploratory programs in order to have orientation to several aspects of the world of work.

When involved in the final phase of career development, the preparation stage, the learner will attain employable skills and qualities needed in the world of work. These qualities include values, attitudes, and competencies for economic independence and personal fulfillment. This phase takes place generally during the senior year of high school for the first years of post-secondary schooling. While the stages are useful for descriptive purposes, it must be recognized that individuals do differ in stages (phases) of development and readiness.

After a decade of concentrated attempts to bring the concepts of career development into the nation's schools, limited results are available at present as to the effectiveness of the various awareness, exploration, and preparation programs.
This research project investigated just one of the three phases of career development, namely the exploration phase. Across the nation, a large variety of exploratory programs now exist for school age youth. The curriculum offerings range from informal approaches such as job-shadowing, career interviews, classroom job-simulations, and actually in-school programs for students to get lengthy hands-on exposure to various technical knowledge, skills and careers.

One form of the exploratory program in the United States was designated as Experience Based Career Education (EBCE). In the fall of 1975, the U.S. Office of Education, through a Part D Adult and Vocational Education funding act, established a system whereby a pilot demonstration model would be established in each of the fifty states. Through the dissemination efforts of four national educational laboratories, EBCE programs emerged across the nation from 1976-1979.

Experience Based Career Education is a program for high school age youth who need to explore the world of work before entering the preparation stage of career development. This program allows the EBCE students to leave the classroom for one or more periods of the school day to be placed with resource people in the business and industry community. In one semester an EBCE student typically explores an occupation at three different job sites. The designers of EBCE from the Far West Laboratory in California, Northwest Laboratory in Oregon, Research for Better Schools in Philadelphia, and Appalachia Educational Laboratory in Charleston, West Virginia established the following common criteria for all EBCE projects (National Institute of Education, 1976):
1. **Exploratory:** the main objective is to help students to determine at the early high school stage what their career interests and abilities are.

2. **Experiential:** a program performed in the real world work outside the educational classroom setting. Students observe many work activities and whenever possible, do some modest "hands-on" experimentation.

3. **Individualized:** after a lengthy process of EBCE - style orientation and planning a specialized program is planned for each participating student.

4. **Voluntary:** no pay is given to the students or to the cooperating business sponsors.

5. **Academic:** basic courses such as English, Math, and Social Sciences have been written into all EBCE projects. In addition to exploring the world of work, the student has an opportunity to use a traditional subject in a work setting (p. 10).

By 1979, the National Institute of Education published a directory of the 190 active EBCE programs within the 50 states. While required by the various federal vocational laws and the NIE's Part D Funding Requirements, evaluation and hard data collection on the 190 major projects has been minimal. To date, no major evaluation effort has taken place in the 1980's to determine what effects the nation's Experience Based Career Education programs have had on the career development of youth.

Experience Based Career Education has expanded to serve not only those students in general education and drop-out centers but for students in special education classrooms. Millions of dollars for development and demonstration projects have been spent on this nationwide career development effort. Since many EBCE programs now face critical financial situations, funding revisions that are research-based need to be made.
Problem of the Study

The problem of this study was to investigate the impact of Experience Based Career Education programs upon the Career Development of secondary students in the nation.

Career development is a multi-faceted dimension of the total learning process. As one of those facets, Experience Based Career Education projects deal with personal-social skill development and the attainment of world-of-work skills. From these two categories, the following sub-problems emerge:

1. Did Experience Based Career Education programs increase the personal-social skills of the students?
2. To what extent did Experience Based Career Education programs help students to develop job-seeking skills?

Purpose of the Study

There were several reasons for conducting an impact study of the nation's recent Experience Based Career Education program graduates. Among them were:

1. Assisting teachers in general education and special education in determining the effect of EBCE upon personal-social skill development and the acquisition of world-of-work skills.
2. Providing assessment information needed to determine the most useful components of EBCE programs.
3. Defining ways that EBCE programs can impact and be of additional assistance to other EBCE students in general education and special education.
4. Assisting vocational educators in identifying the value of exploratory career education.
5. Describing the trend followed by EBCE graduates after program completion.

An examination of the research endeavors to describe the effects of Experience Based Career Education programs provided a summative assessment of the early work. Many project directors and learning coordinators had written yearly summaries of individual program strengths. In large part, the research substantiates the validity of experiential learning through EBCE but does not attempt to follow the actual graduates.

Several end-of-the-year reports of EBCE projects were filed with the various state and federal agencies which resulted from funding provided during the first three years of the demonstration projects. But these projects merely summarized the program and described numbers of students served. Because the EBCE projects were made available to students as early as high school freshmen, and because the projects were only a three year nationally supported effort, no mandate was made to follow-up the graduates. If a student was in the EBCE project in 1976 as a high school freshman, that student would be graduating in 1982 and just now available for follow-up.

After reviewing the project goals for several of the various EBCE programs around the nation, it was discovered that follow-up of graduates was not included. As the review of the literature in Chapter Two indicates, there is no nationwide information available about the overall effects of EBCE upon the graduates.
The lack of research does not automatically constitute an important need. The first direction for vocational program evaluation comes from the Educational Amendments of 1976. Public Law 94-482, Title II Vocational Education, Section 112(b) states:

Each state shall evaluate, by using data collected, wherever possible, by statistically valid sampling techniques, each such program within the State which purports to impart entry level job skills according to the extent to which program completers and leavers——

(i) find employment in occupations related to their training, and
(ii) area considered by their employers to be well trained and prepared for employment.

The Educational Amendments of 1976 that apply to those EBCE programs funded through vocational education dollars follow the passage of the Vocational Education Act of 1963. That piece of legislation started an intensive effort to systematically conduct follow-up studies of former vocational students at both the local and state levels.

Several state and national studies have been identified with a recognized need for comprehensive follow-up studies of former vocational education students. Lee (1977) indicated that there is a serious need to improve the collection and analysis of the state and local data. He added that statistics are too often compiled in different ways, from unreliable sources based on different project definitions.

Further support for the need for follow-up study was found in the National Academy of Sciences study which identified the following in 1976:
1. A lack of rigorous follow-up and impact studies to determine the effects of vocational education programs.
2. Failure to use evaluation in a systematic and comprehensive program planning, policy setting, and review procedures (pp. 40-44).

Still other researchers at the national level have pointed out the general need for follow-up study to support educational decision making. In a 1979 study, Wolf noted the following about effective follow-up studies:

Formal follow-up studies and longitudinal studies of learners have been advocated as one way of generating hypotheses about the effects of programs. Such studies, as research undertaking, have considerable merit, increasing knowledge about what happens to learners as they move through the educational system; as such, they are strongly recommended (p. 120).

At Ohio State University at the Center for Research in Vocational Education, Franchak and Spirer (1978) have become major developers of guidelines for follow-up and impact studies. According to these authors, a primary purpose for follow-up studies is to increase state and local education agencies' ability to:

a) Use the resultant evaluative information to improve programs.

b) Supply information to the U.S. Office of Education in reporting the status and effectiveness of vocational education to Congress (p. 10).

Two major writers have addressed specifically the need to conduct impact evaluation on Experience Based Career Education. At the conclusion of the three year federal dissemination project, the central EBCE figure of the Appalachia Educational Laboratory, Dr. Jack Sanders (1979)
spoke of the urgency in collecting data on the graduates:

As the AEL staff concludes the technical assistance to the 22 member states, a critical examination must be made of the work that remains. State directors must seek new sources of funding. EBCE coordinators must strive to keep the curriculum in touch with the ever-changing world of work. Detailed summative and formative evaluation must take place in order to determine the impact that EBCE has made upon the graduates (p. 18).

While Sanders wrote the need to poll EBCE graduates in general, Muraski (1981) noted the importance of examining the effects of Experience Based Education upon the special education student population.

Follow-up research of learning disabled students after graduation and job placement should be conducted to determine the perceived effect of the EBCE-LD program, and to establish a correlation between the jobs explored while in the program and those entered after graduation (p. 234).

Research Questions and Hypotheses of the Study

The following research questions were developed and hypotheses stated:

1. Is it possible to predict a student's perception of personal-social skills if the student's age, gender, community size, grade level, and previous work experience are known?

   **Null hypothesis:** The contribution of each independent variable (age, gender, community size, grade level, and previous work experience) as measured by the standardized regression coefficients, do not differ from zero beyond that expected by chance at the 95% confidence interval.
$H_0: B_1 = B_2 = \ldots B_{10} = 0$

$H_A: B_j \neq 0$ for $j = 1, 2, \ldots$, and/or $k$

2. Is it possible to predict a student's perception of world-of-work skills if the student's age, gender, community size, grade level, and previous work experiences are known?

Null hypothesis: The contribution of each independent variable (age, gender, community size, grade level, and previous work experience) to the prediction of world-of-work skills, as measured by the standardized regression coefficients, does not differ from zero beyond that expected by chance at the 95% confidence interval.

$H_0: B_1 = B_2 + \ldots B_{10} = 0$

$H_A: B_j \neq 0$ for $j = 1, 2, \ldots$, and/or $k$

3. Is it possible to predict a student's perception of personal-social skills if the program characteristics such as Model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at site each week, and the use of related curriculum are known?

Null hypothesis: The contribution of each independent variable (model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at site each week, and the use of related curriculum) to the prediction of personal-social skills, as measured by the standardized regression coefficients does not differ from zero beyond that expected by chance at the 95% confidence interval.
1. What is the profile of the experimental group and the control group?
2. What percentage of students in the experimental group and the control group are presently employed?
3. What percentage of students in EBCE and Cooperative Education are presently employed in an area they explored through the
4. Which courses were selected most often by students who wanted to learn experientially?

5. How many EBCE students and how many Cooperative Education students were with a coordinator who worked with them on a one-to-one basis for job exploration?

6. How many students in the experimental and control groups were with a coordinator who worked with them on a private basis for job exploration and for related academics?

7. What percentage of students in the control and experimental groups were in programs offered by two different teachers?

8. What is the relationship, if any, between student satisfaction with program and the intensity of assistance from the teacher as measured by the time spent with the teacher?

9. What is the difference between the satisfaction shown on the part of the BCE students and the satisfaction shown by those who were in the Cooperative Education Program?

10. How many of the BCE students and how many Cooperative Education students indicated that as a result of the program, their attitude toward work and/or school changed?

11. What percentage of students felt that the EBCE/Cooperative Education program was a major factor in their finding employment in the career field of their choice?

12. If given the opportunity, what percentage of the students would participate in Experience Based Career Education or Cooperative
Education again?

Design of the Study

The design used for research hypotheses 1 through 4 in this evaluation of Experience Based Career Education program was a modification of the Regressive-Discontinuity Design (Campbell and Stanley Design #16, Experimental and Quasi-Experimental Designs for Research). The design focused on the general question, "Did the program experiences make a difference?" It was selected because there was evidence available to indicate that the (EBCE) experiences did make a difference.

The complete Regressive-Discontinuity Design would have involved a series of observations, treatments, and more observations in both experimental and control groups. Since EBCE already occurred in each of the fifty states in the nation, the prior observation method could not be used. Thus, a "modified" design was used with treatment and set of observations among groups who were involved in EBCE and among groups who were not involved in EBCE. The schematic design was as follows:

\[
\begin{array}{c}
X_1 \\
X_2
\end{array}
\begin{array}{c}
0 \\
0 \\
0 \\
0 \\
0
\end{array}
\]

In the EBCE study, a control group of students was examined in order to determine how they developed their personal-social skills and world-of-work skills. Similarly, the EBCE students were questioned to determine what effect EBCE (the treatment) had on their development on personal-social skills, and world-of-work skills. The schematic design is as follows:
Assumptions of the Study

1. The procedures used for selecting the subjects for the study were valid and reliable.
2. When EBCE was offered to Special Education students, the five basic parameters of the program remained intact.
3. The students surveyed were involved in an EBCE project that was originally established by one of the four National Research Laboratories.
4. The student questionnaire was valid and reliable.

Limitation of the Study

1. The quality and depth of the findings was limited to the extent that the coordinators of EBCE were willing to distribute the surveys to the requested number of graduates.

Procedure

The first major step in conducting a national survey of Experience Based Career Education graduates was to determine the feasibility of contacting graduates across the nation. In order to identify how many of the project coordinators were willing to cooperate with the mailings to four years of graduates, a preliminary survey was used.

In the Fall of 1982, the National Experience Based Career Education Association in cooperation with the Fayette County Public Schools in
Lexington, Kentucky, sponsored a project to develop a directory of all EBCE programs in the nation. The directory drew information from 82 active master programs in the nation. The directory identified current project leaders and listed mailing addresses. Using that data, a mailing was sent to all 82 project leaders. A self-addressed, stamped envelope was included for easy response. The preliminary survey asked how many were willing to locate a sample of graduates from the years of 1978-1982. The results of the preliminary survey were as follows:

<table>
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<th>In-State</th>
<th>Out-of-State</th>
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<tr>
<td>yes</td>
<td>8</td>
</tr>
<tr>
<td>no</td>
<td>4</td>
</tr>
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Total 72

The total number of responses was 72 for a return rate of eighty-eight percent. Those 18 coordinators who returned the cards and said that they could not participate listed the following reasons: project discontinuance, numbers too small to sample, versions of EBCE that were quite different from the original model, and special education projects that would require different sampling techniques.

The sample of EBCE graduates utilized was drawn from a group of the 54 projects whose coordinators indicated their willingness to cooperate. A copy of the preliminary survey as well as the listing of the 54 schools appears in Appendices A and B.

The next step in the Experience Based Career Education study was to survey the related literature in the field. The major areas of the review included:
1. Theory of career choice and development
2. Foundations of the career education movement
   a) National initiative
   b) Career development process
   c) Parameters, characteristics and definitives
   d) Phases
   e) Iowa's state model
3. Experience Based Career Education
   a) General description
   b) National demonstration site finding
   c) State project findings
4. Summary

The third major segment of the project was the development of a questionnaire that was mailed to an appropriate sample of EBCE graduates. The questionnaire was based upon the instrument used by Sullivan (1982) in an Iowa follow-up of EBCE graduates for Mankato State University. That instrument was developed for use in local projects by instructors who were EBCE field coordinators for several years. The Sullivan survey was intended primarily for students in the general education sector. Since the national EBCE research focused on more research hypotheses than the Sullivan project did a section of background information was added to the survey instrument. The writings of Franchak and Spirer in the realm of educational evaluation were used to develop the theoretical base for the instrument (Franchak and Spirer, 1978).
The next major aspect of the study impact of Experience Based Career Education Programs upon the career development of youth was to establish a control group of students who were in a program similar to EBCE. These students were a group of graduates who were in cooperative vocational programs with goals like those of EBCE. The survey instrument was revised in order to state the questions in appropriate manner. The control group size was approximately 10 percent the size of the sample experimental group. From this sample group of students in a control group, generalizations were made to the entire population of students who did not participate in EBCE. Like the EBCE surveys, the surveys for the nonparticipants contained information about demographics, personal-social skill development, method of selecting job preparation, and actual employment situations.

Analysis of Data

The first step in the statistical analysis was the calculation of the descriptive statistics of both the control group and the experimental group (Borg and Gall, 1979, p. 422). The data gathered for this study were coded using the language of the Statistical Package for the Social Sciences (SPSSx) Manual (1983). Means and standard deviations were calculated for the control group and the larger treatment group separately. All analysis was conducted with the assistance of the Computer Program Services of Iowa State University.

The second step involved the use of Stepwise Linear Regression on Research questions 1 through 4. The Regression Technique was used
because the independent variables included a combination of nominal, ordinal, interval, and ratio data. The dependent variables were: development of personal-social skills and development of world-of-work skills.

For the four research hypotheses, there were two sets of independent variables. There were student independent variables such as: age, gender, geographical location, grade level, and previous work experience. There were also several program independent variables such as: Model of EBCE used, type of instructional support, length of time in program, number of sites explored, amount of time at site each week, and the use of related curriculum.

Various tables and pertinent graphs were presented to elucidate discussion of the findings. Separate presentations are made for findings that relate to EBCE's role in personal-social skill development and EBCE's role in assisting students with world-of-work skill development. Recommendations based upon the result of the study were made.

Definitions of Terms

Specific operational terms or phrases used in this study are defined as follows:

**Career Development:** The continuous process of making career decisions based on the individual's experience and interactions (e.g., the child's first impression of the working world, the adolescent's consideration of vocational alternatives, or the adult's decision to change careers).

**Career Education:** A comprehensive educational program that focuses
on individual career development beginning with grade one or earlier and continuing through the adult years.

Career Exploration: Investigating occupational interest areas, often through real or simulated job experience, frequently found in career education programs for grades 6-10.

EBCE: The acronym for Experience Based Career Education. This follow-up study is directed toward EBCE graduates from the 82 developer-demonstrator federal projects. EBCE is an early high school program for students who need to explore the world of work.

Educational Laboratories: Four branches of the National Institute of Education that are responsible for the dissemination of EBCE across the nation. They are: Far West Laboratory, Northwest Laboratory, Research for Better Schools, and Appalachia Education Laboratory.

Experiential Education: The term used to denote the learning of otherwise traditional subject matter "outside" the four walls of the school. If a student learns geometry from a carpenter at a construction site, the math is said to be learned experientially.

Learning Coordinator: Also called the LC, the teacher or facilitator of learning through EBCE. The LC is responsible for delivering a student's entire EBCE schedule in general education settings. An average student ratio is 20 per LC.

Personal-social Skills: Those behaviors that people acquire through formal or informal learning such as: the ability to speak clearly, the ability to listen, the ability to make decisions in situations where other people are involved, plus a variety of hygienic and grooming habits
that make one presentable in social situations.

Resource person: RPs are any individuals who have direct responsibility for students in EBCE at a job site. They are called resource persons because they are the resource for the students who are placed with them.

Selection of Training or Employment: The terms used in this study for the preparation phase of career development. In this process, the student will actually make a decision about what steps to take beyond career exploration relative to a specific job category.

Special Education EBCE: Programs operated throughout the 50 states that are directed toward students who are officially staffed into a Special Education program. For the purpose of this research, only the mentally disabled and the learning disabled students will be included. The respective definitions are:

Mental disability (MD) is the inclusive term denoting significant deficits in adaptive behavior and subaverage general intellectual functioning.

Learning disability (LD) is the inclusive term denoting deficiencies which inhibit a pupil's ability to efficiently learn in keeping with one's potential by the instructional approaches presented in the usual curriculum and require special education programs and services for educational purposes.

Worker Trait Group: The clustering system into which the U.S. Department of Labor has categorized some 32,000 jobs based on:

1. the extent to which the jobs involve people, data, things;
2. similar worker qualifications such as educational requirements, vocational preparation needed, physical demands of the job, and needed aptitude.

Instead of placing students by job title, EBCE Learning Coordinators use the Worker Trait Group System.
World-of-Work Skills: Those techniques that assist an individual in securing gainful employment. The skill set includes methods of learning about careers, selection and refinement of personal career clusters as well as activities for job-seeking and job-keeping. This skill development process can involve activities that enable students to be aware of the world-of-work, explore actual work situations and participate in actual job training.
CHAPTER II. REVIEW OF THE LITERATURE

The literature reviewed in this chapter focused on the theories of career choice, the foundations of the career education movement, and the background of Experience Based Career Education.

Theories of Career Choice and Development

The initial theory of career choice which dominated the first half of this century was heralded by Frank Parsons in 1909, then director of the first vocational guidance center in the United States. Parsons proposed a three-step approach to occupational choice: (a) Understand yourself and what you are, (b) know the requirements and demands of a variety of occupations, and (c) compare these two information sets to choose the occupation which best suits you (Bailey & Stadt, 1973). First described by Parsons as the scientific approach to vocational guidance, this theory was the antecedent to the empirical movement in career choice. Throughout the first half of the twentieth century, the major focus of all career choice theory was to match general abilities with career interests using increasingly more complex forms of empirical data. The theory's most pronounced use of data analysis was evident during the two major wars, when intelligence test scores were used to place military inductees. Eventually, this approach was refined to the use of factor analytic research which later evolved into work station assessment systems such as the Army Air Force Classification Battery (Guilford, 1948) and the present day Valpar system.
In a reaction to this empirical mind set, theorists of the 1950s and 1960s proposed a variety of theories which attempted to establish specific generalizations and patterns of career choice, spanning the lifetime of the individual. Based on Buehler's theory of life stages including growth, exploration, establishment, maintenance and decline (Super & Overstreet, 1960); Ginzberg, Ginzberg, Axelrod, & Herma (1951) proposed the first developmental theory of career growth. Using the results of an empirical study with eastern middle-class youth, the researchers attempted to define the developmental patterns of career choices young people make before and after college.

They concluded that the process of occupational decision-making could be analyzed in terms of three developmental periods. These periods can be differentiated by the way an individual 'translates' his impulses and needs into an occupational choice (Bailey & Stadt, 1973, p. 66).

These include:

1. The fantasy period, which occurs between 6 and 11 years of age, is characterized by the child's arbitrary selection of the occupation because the work activity seems fun to do. The researchers coined this hedonic process the pleasure function.
   a. The child does not take into account the specific realities of choosing this occupation.
   b. No comparison is made between the child's abilities, potential, and the chosen occupation.

2. The tentative period occurs between ages 11 and 17, and includes the stages of interest, capacity, value, and transition. This
period is characterized by the adolescent's realization that the choice of a future career is imminent. The individual begins to match specific interests and values with the realities which determine occupational choice.

3. The realistic period begins at age 18 and includes the stages of exploration, crystallization, and specification. During this period, the individual arrives at a state of compromise between desire and availability.

Another major researcher to examine the developmental patterns of career choice was Warren D. Gribbons. The Gribbons work in the late 50s revealed that students' personal interests are the primary indicators of career choice until approximately the fourth grade. After that time, aptitude plays a predominant role. Among the social forces, the school system is of primary importance in the shaping of that aptitude and ordering of the stages of career development (1959).

Research work done in the 50s and early 60s attempted to assign a certain number of years to the career development process. However, the work of Ginzberg (1972) proposed that career development be viewed as a lifelong process. Ginzberg indicates that while decisions made during the first 21 years of life certainly influence career choice, persons continue to undergo change in both work and life. In addition, Ginzberg emphasized that the primary force in the decision-making process remains the individual.

Like later developmental theories, Ginzberg et al. (1951) and Ginzberg (1972) described patterns of behavior and the traits related to
those behaviors in generalized stages of development. For each stage, there is a key trait and related choice behavior which has a cumulative effect throughout the developmental process. What makes Ginzberg's work developmental is

that the vocational choice is seen as a process, that the process is systematic, that it is predictable, and that occupational choice culminates in an eventual decision to enter a specific occupation (Zaccaria, 1970, p. 42).

In addition, the theory is unique because it focuses on the individual as the prime decision-maker and expands the process of career choice throughout life; thereby linking career development to more than just work-related behaviors. Career development, then, is an integral part of all life activities.

Attempting to synthesize Buehler and Ginzberg's work, Super (1953) proposed a comprehensive theory of career development. After defining the elements of career development in the literature, Super organized these into propositions, which serve as a summary statement of career development.

1. People differ in their abilities, interests, and personalities.
2. They are qualified by virtue of these characteristics, each for a number of occupations.
3. The process may be summed up in a series of life stages.
4. The nature of the career pattern (that is, the occupational level attained and the sequence, frequency and duration of trial and stable jobs) is determined by the individual's pa-
rental socioeconomic level, mental ability, personality characteristics and by the opportunities to which he is exposed.

5. Development through life stages can be guided.

6. The process of vocational development is essentially that of developing and implementing one's self-concept.

7. The process of compromise between individual and social factors, between self-concept and reality, is one of role playing.

8. Work satisfactions and life satisfactions depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values (pp. 189-190).

In the process of devising a developmental model based on the prior statements, Super (1957) synthesized other developmental models into five life stages. Each stage describes a specific vocational behavior, and has an age limit. The major importance of the model is that it proposes that vocational development is a continuous process, which is generally irreversible and provides an orderly pattern of development (Bailey & Stadt, 1973).

The first stage of Super's model is the Growth Stage (birth to 14), and its major focus is on the physical and psychological growth of the individual. During the fantasy substage (4 through 10), the individual develops mental concepts and attitudes about certain occupations, based upon contact with primary and secondary group members. In the interest and capacity substages (ages 11 to 12 and 13 to 14, respectively), the individual increases the amount of social participation with group
members and tests his perceptions against what he perceives as the world of work. At the same time, underlying this level of activity, the individual is developing a self-concept based upon his perceptions and needs. The reality component of the self-concept is the self-image, which is based on the individual's experiences and reality-testing. The closer the degree of match between the self-concept, self-image and the final career choice, the more satisfied the individual will be.

In the Exploration Stage (ages 15 to 24), the individual uses self-examination, role tryout and occupational exploration to become more aware of specific occupations through different types of life activities. From the tentative (15 to 17) to transition (18 to 21) and trial (22 to 24) substages, the individual continues to test the options of specific types of occupations. The process is one of continual testing, as the names of the stage and substages imply. Gradually, the individual begins to match capabilities with interests and opportunities. By the end of the exploratory stage, the individuals begin to measure their self-concept and self-image against their potential. This is the major phase of career decision making, and determines the primary level of match between the self and reality.

During the Establishment Stage (ages 25 to 44), the individuals begin to concentrate on making a permanent place in their chosen field. As the substage titles imply (trial 25 to 30; and stabilization, 31 to 44), there may be consequential shifting within the field to obtain a more realistic fit, but the major emphasis remains on building a career. Throughout this phase of the process, the individual continues to match
the self with reality and toward the end of this phase, begins to internalize the occupation as part of the self. The ultimate result is self-satisfaction.

Although the work of Super is considered some of the "landmark" research in career development, it can be noted that these specific year associations violate the individual differences concept. Individual differences would suggest that the precise years may not fit all individual cases. The stages, years and explanations are merely guideposts for examination of various dimensions of career development and are useful for descriptive purposes.

In the Maintenance Stage (age 45 to 64), the emphasis is on maintaining a position in the world of work. The individual continues to maintain or improve the match between self and reality by enhancing the positive aspects of the career and eliminating negative ones. This may be accomplished either by changing positions or through promotion, but the emphasis remains on maintaining the balance between self in the form of concept, image and needs, and reality, or the occupation.

During the Decline Stage (age 65 and on) work activities begin to slacken in relation to physical and mental abilities. During the substage of deceleration (65 to 70), the individual becomes a selective participant, while during retirement (71 and on), the switch is made from participant to observer. These timelines and substages may vary, depending upon the individual's pace of deceleration.

As stated earlier, the major emphasis of Super's theory is the development of the self-concept through career choice. This is achieved
by matching the concept, image, and personal needs with the reality of a career in the world of work. Since, according to Super's theory, individuals attempt to enhance their self-concept, activities are chosen which allow people to do this. Several theories have expanded Super's original theory (Figure 1). For instance, Blau, Gustad, Jessor, Parnes and Wilcock (1956) proposed a framework which relates variables of choice with those of selection. They conceptualize the process of career choice as a compromise between direct determinants, over which the individual has control (those listed on the left side of Figure 1), and those over which there is little or no control (listed on the right side). The part of the figure above the horizontal dotted timeline represents the social and psychological conditions of choice and selection; the part below the line lists factors which produce the conditions above the line. The process of occupational choice represented by the figure is a compromise between a person's hierarchies of preference and expectation. This process is known as a compromise of choice, and is determined by the individual. However, another dynamic element simultaneously occurring is known as the compromise of selection. "In selection, the occupation (rather than the individual) compromises between ideal and available workers . . . it is the combination of the two procedures which explains why people end up in different occupations" (Bailey & Stadt, 1973, p. 74). What makes this process developmental is that it occurs over a period of time in sequence and represents a dynamic equilibrium between two forces.
Figure 1. Relationship of process of choice and process of selection (Source: Peter M. Blau et al., 1956, p. 534).
Tiedman (1961) carried this concept of sequence and dynamism one step further by contending that each decision within the career development process has both of these qualities. According to Tiedman, the act of decision making goes through dual levels of anticipation and adjustment. During the anticipation level, the individual proceeds through four stages of exploration, crystallization, choice, and specification. During each stage, the individuals begin to test the decision against their self-image and goal. Once the relationship between these two has reached a state of balance, the adjustment level begins and is divided into the stages of induction, transition, and maintenance. This second level is one of reality testing between the individual's expectations and those of the world of work. The final stage of maintenance represents a state of dynamic equilibrium in which internal and external conditions may change the status quo. This entire process occurs each time a career decision is made. Each time the person goes through this process, the self-concept assumes influence on subsequent stages of development.

Using Parson's initial factor theory and combining its concept of career choice with the development stages first proposed by Buehler and later augmented by other theorists, the following generalizations may be made regarding career choice.

1. Career choice is a developmental, decision-making process involving the match between an individual's expectations of self, known as the self-concept, abilities (traits), and the reality of the work of work to evolve a functioning self-image. The end result of this
process is a stage of dynamic equilibrium between the self-concept and the world of work. The state of this balance is evident in the level of function or dysfunction within the self-image.

2. The process of career choice is developmental by nature, since it evolves throughout one's lifetime, involves all facts of life, and is marked by a sequential pattern of stages with related specific behaviors. Each career decision within these stages may further be delineated into a specific pattern of behaviors, which may coincide with the overall developmental sequence.

The Foundations of the Career Education Movement

National Initiation

Sidney P. Marland, Jr., has been credited with the distinction of coining the term "career education" in a keynote address before a principal's convention in 1971. However, career education was used earlier in several states prior to this date. In his speech, Marland rallied against educators and school administrators for making vocational education a second-class alternative to general education. Throughout the address, he accentuated the practicality of teaching useful skills rather than general skills. He further stressed the need for lifelong learning, humaneness, occupational exploration, reform of the high school curriculum, the need for training in new vocational fields, and the cooperation between the world of education and work. Marland also argued that these reforms in American education must be met if the basic goal of the educational process is to be that every student by grade twelve be ready to
enter either higher education or rewarding employment.

Though the term "career education" was being used in a rapid fashion, the concepts contained in Marland's speech evolved long before and are reiterated throughout the vocational education legislation of the 1960s. The distinction of what Marland proposed was that the term "career education" expanded the meaning of vocational education beyond the narrow concept of training to include the lifelong process of career development.

Career Development Process

Prior to Marland's 1971 keynote address, the modern social momentum for reform in American education could be traced to the writing of the so-called romantic critics of the 1960s, including men such as A. S. Neill, John Holt, Herbert Kohl, Jonathan Kozol, and Ivan Illich (for a more specific explanation of these, see Miller & Woock, 1973). Their call for radical reform of the education institution was tempered and synthesized with a renewed emphasis on functional skills to fit the existing structure by more moderate educators such as Marland and Hoyt. The criticism Hoyt (1975) leveled against the existing system of education was severe and similar to those of the romantics.

Too many persons leaving our educational system are deficient in the basic academic skills required for adaptability in today's rapidly changing society. Too many students fail to see meaningful relationships between what they are being asked to learn in school and what they will do when they leave the educational system.

The present system best meets the educational needs of that minority of persons who will some day become college
graduates. Too many persons leave our educational systems at both the secondary and collegiate levels unequipped with the vocational skills, the self-understanding and career decision-making skills, or the work attitudes that are essential for making a successful transition from school to work.

The general public, including parents and the business-industry community, have not been given an adequate role in the formulation of educational policy.

It does not adequately meet the needs of minority or economically disadvantaged persons in our society. Post-high school education has given insufficient emphasis to educational programs at the sub-baccalaureate degree level (Hoyt, 1975, pp. 1-2).

Compared to the philosophy of conflict proposed by the romantics, the more moderate channel of dynamic equilibrium posed by Marland and Hoyt was much more palatable to both society and the educational institution. The change in direction had already been signaled by the passage of the Vocational Education Act of 1963 and its amendments of 1968. The call for relevancy and a functional education had filtered from the college to the high school, and was now considered acceptable by society. The time was ripe for change, and Marland's address served as the catalyst for such a change.

Parameters, characteristics and definitions

Using Marland's speech as the formal announcement of reform, the Office of Education began to solidify its position on career education. The first indication of this was a publication by the Division of Vocational and Technical Education (now the Bureau of Occupational and Adult Education) entitled Vocational Education for the 1970s (Rumpf, 1971).
This document clarified the intent of career education as outlined in the six objectives:

1. To provide every young person who completes high school with salable skills and assured entry to further education or training.
2. To provide those students who leave high school before graduating with a salable skill and reentry opportunities into education or training.
3. To provide career orientation starting in kindergarten and guidance, counseling, and placement services to all students at all levels of education to assist them in career choices and in making job changes.
4. To assure every person the opportunity to obtain career-related skills throughout life, within or outside of schools, with employers assuring a greater role.
5. To emphasize and enlarge postsecondary and adult vocational and technical education programs, including pre-technical programs for the academically handicapped, so that a much higher proportion of specific skills training will occur at the postsecondary level.
6. To assure that every individual is prepared by education, regardless of curriculum to lead a productive and self-fulfilling life (pp. 2-3).

It also provided 12 characteristics of the career education model:

1. Career education will replace general education.
2. Vocational education will give priority to special target groups.
3. Career education will begin in the elementary grades and continue throughout life.
4. Specific skill training will be available for all who choose it at the secondary, postsecondary, and adult levels.
5. Vocational education will make a greater impact at the postsecondary level.
6. Adult vocational education will be emphasized to permit updating and upgrading of job skills, to insure continued employment, and to permit adults to make career changes.
7. Job placement and follow-up will be a continuing school function.
8. Greater involvement of employers and private schools in providing vocational education will be evident.
9. Leadership development for vocational personnel and teacher preparation and upgrading will be required.
10. Vocational education youth groups will be encouraged and their activities supported as an integral part of career education.
11. Effective and continuous evaluation is required.
12. Performance incentives will be utilized to help obtain the most beneficial results (Rumpf, 1971, pp. 5-10).

During the same year of Rumpf's publication, the Office of Education in conjunction with the Department of Labor, developed a list of 15 career clusters based upon the 20,000 jobs listed in the Dictionary of Occupational Titles (DOT) (Brolin & Kokaska, 1979). These fifteen clusters have recently been combined to form 12 clusters with 66 corresponding worker trait groups and 148 subcategories by the Appalachia Educational Laboratory in cooperation with the Office of Education and the U.S. Department of Labor (Brolin & Kokaska, 1978). The new clusters are artistic, scientific, nature, authority, mechanical, industrial, business detail, persuasive, accommodating, humanitarian, social/business, and physical performing.

Each of these clusters identifies with a number of specific worker traits and subcategories. For instance, the cluster "artistic" has eight traits in its group and 148 subcategories. Each trait describes a specific area of career interest and lists several types of occupations. The subcategories under each of these traits is a more detailed breakdown of the trait and occupational listings. Each occupation listed in the system includes a coded number for reference in the DOT (1978). More than 20,000 occupations listed in the DOT describe the particular work activities, situations, and worker aptitudes required for the job. In
a career guidance situation, these descriptions are matched to the student's interests and aptitudes to select possible careers.

**Defining career education**

Since the inception of the career education concept, a number of definitions have been posed by various authors. Each definition differs in its emphasis and extent of school involvement. Bailey and Stadt (1973) summarized the definitions of the early theorists in three categories. They concluded that these early definitions describe the movement in terms of types of delivery systems and curriculum, concept, and/or behavioral process. They, however, regarded these attempts as fragmented and often confusing two very distinct elements. They preferred to define career education in terms of concept and program.

Career education refers to educational programs and curriculums at many different developmental levels, and provided by several types of delivery systems, which provide experiences designed to help individuals become oriented to, select, prepare for, enter and become established, and advance in an individually satisfying and productive career. Basic to the concept of career education is the recognition that preparation for a career role must begin in early childhood if the individual is to develop the concepts, attitudes, and skills which insure freedom of choice and expand career options. Career education eliminates artificial distinctions between 'general' and 'vocational' education by fusing the two in a manner which enables the student to better solve personal, social and career related problems (Bailey & Stadt, 1973, pp. 346-347).

This definition is significant because it separates the career education curriculum and process from the student behavior usually associated with definitions of career education. The definition centers on the variety of delivery systems and programs available at all levels
of education, emphasizes early preparation in a developmental pattern, and links the more specialized area of vocational education to the broad concept of career education.

Career development is an emerging term from the 1970s to the 1980s that describes the accumulation of individual behaviors related to work before and after entry into an occupation. It is a developmental, continuously iterative process which progresses from infancy to adulthood.

Hoyt (1975) proposed that the relevance of a definition of career education must be based upon the acceptance of four basic propositions:

1. The productivity of any society has a direct relationship to the nation's commitment to the work ethic.
2. The classical Protestant work ethic in American society is eroding and is no longer being accepted by a number of society's members.
3. No civilization has prospered after it abandoned its commitment to the work ethic.
4. The goal of career education is to restore the commitment to the work ethic which has been adapted to reflect the new social and economic realities of our society.

Based upon these four propositions, Hoyt (1975) defined career education as a societal reform movement, the purpose of which is to refocus American education and rebuild part of the American values system.

Career education can be defined as an effort aimed at refocusing American education and the actions of the broader community in ways that will help individuals acquire and utilize the knowledge, skills, and attitudes necessary for each to make work a meaningful, productive and satisfying part of his or her way of life (Hoyt, 1975, p. 5).

Though this definition is more political rhetoric than functional description, it does offer several factors the Bailey & Stadt (1973)
definitions did not. First, it links the community to the career education effort and defines its role. Second, it defines work not only as a productive activity, but also as something with purpose and satisfaction. The implications of this final factor imply that a career is more than just an occupation, rather it becomes a way of life. Brolin and Kokaska (1978) traced the evolution of Hoyt's definition from his early 1975 writings to his more recent 1977 publications. With each succeeding publication, the definition of work broadens to include all life roles and experiences, both paid and unpaid.

The following definition by the U.S. Congress was published as part of P.L. 95-207 in December of 1977. Like Hoyt's (1977) more recent definitions, this one includes the concept of work as a way of life, covering a variety of life roles. It also adds legal implications in respect to the types of experiences career education should offer.

Career education . . . means the totality of experiences which are designed to be free of bias and stereotyping on account of race, sex, age, economic status or handicap, through which one learns about and prepares to engage in, work as part of his or her way of living, and through which he or she relates work values to other life roles and choices (such as family life) (P.L. 95-207, December 13, 1977).

Although these definitions vary in their approach and extent of involvement, they do have several specific commonalities. First, each one emphasizes the need for career education to meet the individual needs of each student. Second, each one states that the process of career education is based upon the developmental pattern of the individual. Third, they all stress the need for work, although in differing degrees
and types. Work and purposefulness is a central theme to all. Fourth, they also stress the need for community involvement; career education is not only the responsibility of the school, but also the child's, parent's, church, and the business community. Finally, these definitions stress that the purpose of career education is to expand life options and prepare the individual for adult life. The ultimate implication of these final commonalities means that career education of each individual is the lifelong commitment of the entire community. Hoyt (1975) represented this commitment, as graphically expressed in Figure 2.

**Phases of career education**

Each of the definitions discussed previously emphasized the concept that career education is a developmental process. Bailey and Stadt (1973) went to the extent of providing two definitions: one for the educational component, and the other for the behavioral outcome or development component. The basic assumption of all these definitions is that making a career choice is a dynamic developmental process, then the process can be represented through specific external milestone behaviors. These behaviors may be grouped into stages; each one signifying a certain level of developmental maturity. In like manner, a career education curriculum should parallel these developmental levels and provide learning experiences which will facilitate the child's career growth. Bailey and Stadt (1973) suggested that there are five levels of career education for school age children from kindergarten to the twelfth grade: awareness, accommodation, orientation, exploration, and
<table>
<thead>
<tr>
<th>Domains of Career Development Behaviors</th>
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<th>B. Recommendation 4-6</th>
<th>C. Orientation 7-8</th>
<th>D. Exploration and Preparation 9-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Concepts of self</td>
<td>A1</td>
<td>B1</td>
<td>C1</td>
<td>D1</td>
</tr>
<tr>
<td>2. Occupational, educational and economic concepts and skills</td>
<td>A2</td>
<td>B2</td>
<td>C2</td>
<td>D2</td>
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<tr>
<td>3. Sense of agency</td>
<td>A3</td>
<td>B3</td>
<td>C3</td>
<td>D3</td>
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<tr>
<td>4. Information processing skills</td>
<td>A4</td>
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<td>5. Interpersonal relationships</td>
<td>A5</td>
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<tr>
<td>6. Work attitudes and values</td>
<td>A6</td>
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Figure 2. Developmental curriculum model for career education
preparation. Each phase includes a rationale and set of performance objectives from six domains of career development (concept of self; occupational, educational and economic concepts and skills; sense of agency; information processing skills; interpersonal relationships; and work attitudes and values). The sense of agency refers to the individual's ability to accept responsibility and initiative as the individual tries to crystallize his/her occupational choice.

Phase I: awareness. The awareness phase of career education usually begins at the preschool or kindergarten level and extends to the third grade. The intent of this phase is to encourage the development of work habits, build a sense of community, establish an awareness of the variety of occupations available, and assist students in developing realistic attitudes toward occupations and employment. Instruction during this phase should employ inductive approaches using concrete examples to build basic concepts toward the world of work. This is the child's first step in developing an awareness of self and others outside the immediate family. It is important that the student develop a respect for these others, the work they do and the role they play in his life (Bailey & Stadt, 1973).

Phase II: accommodation. This phase of career education usually extends from grades four through six. Its purposes are to provide experiences for the students to discover their interests, abilities, values and needs as they relate to various occupations; provide opportunities for students to observe and interact with workers in the community; to match these interactions with particular occupational
groupings; and to continue the student's development in basic skills. Since the student is at the concrete operations level of development, instruction during this phase should continue to use concrete data to build problem solving skills. Most children will begin to expand the conclusions reached using concrete data to more abstract generalizations.

Phase III: orientation. This phase of career education usually takes place at the junior high school level. Its major purposes are to clarify the self-concept, assume responsibility for career planning, develop problem solving skills, clarify social responsibilities, and develop an appreciation for work as a social institution. The career education program during this phase should assist the adolescent in using reality testing of potential occupational choices. Again, this is accomplished mainly through discovery learning experiences within the classroom setting. The instructional content of this phase should emphasize social development rather than cognitive skills. Using discovery learning techniques, the student can build a repertoire of appropriate social behaviors to assist in establishing job-related behaviors.

Phase IV: exploration and preparation. This phase of career education extends from grades nine through twelve. Its major purposes are to crystallize the self-concept, qualify for career objectives, implement a career plan, apply problem-solving skills, understand the dynamics of group behavior in work, and acquire the discipline of work. Since the student has reached the stage of formal operations, Bailey and Stadt (1973) suggested that the instruction should be more direct and work oriented. Students at this phase should explore several clusters and
occupations, make definite career plans and implement the plans. The approach used should emphasize trial and hypothesis-testing with hands-on experiences, rather than the laboratory situation of the classroom.

Although the name and number of phases of career education (career development) differ among authors, the content centers on four basic phases. Kahler (1976) prepared a Career Education Model for the State of Iowa and included the four phases of awareness, accommodation, exploration, and preparation. The model depicted the United States Office of Education Model for the 1970s with the preparation phase expanded to show continuous progress learning (Figure 3).

In another researcher's description of the phases of career education, Johnson (1979) described four levels as awareness, orientation, exploration, and preparation. Realizing that all of the various models include a plan for students from grades K through 12, writers disagree on the emphasis at the upper elementary level. Few, however, disagree with the need for exploration at the junior high school or early high school level.

The exploratory phase includes such activities as:

1. Realizing the importance of performing a job to the best of one's ability.
2. Actual job site exploration in a variety of settings and related career fields.
3. Exploration of job-related behavior.
4. Examination of the relationship between academic work and the world of work.
Figure 3. Model for career development
5. Accepting the responsibility of career planning.

All of the writers surveyed agreed that the exploratory phase is most important but often overlooked in the traditional vocational program. The student need not earn a wage in order to explore the various dimensions of the world of work.

Experience Based Career Education

General descriptions

One of the innovative efforts of the United States Office of Education was Experience Based Career Education. As critics of the 1970s targeted criticism at the secondary school system, a central effort was made by the Federal Government to allow the four educational laboratories to develop experimental models of career exploration.

A growing number of Americans—educators and the lay public alike—were voicing increased awareness of the problems of formal schooling and the need for reform, revitalization, and renewal. As the Phi Delta Kappa Task Force on Compulsory Education and Transition for Youth notes, "Schooling of adolescents is often conducted in ways contradicting the nature and demands of human growth and development" (Gibbons, 1976, pp. 49-50). The report argues that young people need to be active, self-directed, and intensely involved with their learning.

Kenneth Hoyt, Director of the USOE's Office of Career Education, highlights what many school people and community leaders have long felt: "Too many students fail to see meaningful relationships between what they are being asked to learn in schools and what they will do when the
leave the educational system" (Hoyt, 1976, pp. 17-18). This point is supported by data from a nationwide survey on career education which indicated that less than 35% of middle school students and 40% of secondary students across the country are shown how skills learned in school are useful for work in various careers or occupations (McLaughlin, 1976, p. 59).

As critics called for a more active and self-directed learning role for all students and a chance for young people to apply what they were learning to situations outside of the classroom, EBCE was developed. Experience Based Career Education was designed to prepare youth for the transition to adulthood by (1) adapting learning goals and learning strategies to meet the needs, interests, and abilities of each student; (2) organizing the various disciplines into an integrated curriculum; and (3) providing youth with "hands-on" learning experiences with cooperating adults at community sites.

In a broad sense, Experience Based Career Education can be defined as "an operational expression of the conviction that a comprehensive curriculum exists outside the walls of the school. It assumes that the educational environment can be restructured to take maximum advantage of both the value of direct experience and the social capabilities of community institutions in helping young people prepare for adult responsibilities" (Hagens, 1976, p. 6).

EBCE was initially designed as an alternative program for a cross section of high school students. The program integrates academic learning, career experiences and life skills development through individual
direct learning experiences in school and in the community.

Figure 4. The five parameters of EBCE

From the earliest stages these five parameters were developed and adhered to as the distinguishing characteristics of EBCE. Further explanation includes:

1. The program must be community based. The business site becomes an extension of the education classroom.

2. Scheduling is highly individualized. The EBCE program of each student is independently planned with the instructor as a part of their required IEP (Individualized Educational Program).

3. It is voluntary. No pay is given to the employer or the students.

4. EBCE is exploratory and the students are not productive laborers. Sites change to meet exploratory needs of each student.

5. Academics are correlated with the activities at the exploration site.
Begun in 1971 and sponsored by the National Institute of Education, EBCE has been developed and implemented through four regional educational laboratories—Appalachia Educational Laboratory, Far West Laboratory for Educational Research and Development, Northwest Regional Educational Laboratory, and Research for Better Schools. A demonstration site was established by each laboratory between 1971 and 1975. These four demonstration sites received substantial federal funding, operated under common guidelines, and were carefully supervised to assure compliance with each laboratory's EBCE model. The program and student outcomes at these demonstration sites were carefully evaluated by the four laboratories and by a third-party evaluation performed by Educational Testing Service (ETS). Although each of the four models had distinctive features, all four shared certain goals related to helping students develop the knowledge and skills necessary for choosing, entering, advancing in, and finding satisfaction in adult roles.

EBCE learning opportunities are geared to helping students in three key areas: career skills, life skills, and basic skills (Bernhart & Owens, 1979, p. 8).

EBCE career skills goals included:

- Increasing students' knowledge of their aptitudes and abilities relevant to their potential career interests.
- Providing students with opportunities to explore various occupational areas to observe and try out the type of work required and to determine whether it fits with their interests and needs.
- Helping students to develop general skills in finding and applying for a job and handling daily work interactions.
EBCE life skills goals included:

- Furthering students' awareness of 'where they are going'.
- Helping students to learn to take responsibility for their actions and recognize the effect of their behavior and attitudes on themselves and others.
- Improving students' ability to analyze problems critically.
- Increasing students' interpersonal skills and furthering their ability to relate constructively and effectively with fellow students and adults.
- Helping students to learn survival skills that are minimal requirements for living in today's society.

EBCE basic goals included:

- Helping students to progress in basic academic skill areas such as reading, writing, mathematics, and oral communications; and helping students to learn to apply these skills outside the classroom and on the job.
- Increasing students' awareness of the skills needed to enter careers of their choice.

Outcomes from these demonstration sites were very encouraging and led to EBCE being reviewed and certified as an exemplary program for federal dissemination funding by the Joint Dissemination Review Panel. In a 1979 director of EBCE programs sponsored by the National EBCE Association, the authors describe 190 programs in 48 states, including the District of Columbia, and Puerto Rico (Spotts & Hampson, 1979, p. 2).

Although the early thinkers about EBCE considered it primarily as an alternative high school program, various educators around the country saw components of EBCE they wished to adopt or modify rather than using the entire program.
In Huron Institute's 3-year study of EBCE implementation, the authors point out that "to meet local needs, school personnel did everything to the program models from fine-tuning to wholesale restructuring. In sites we visited, curriculum materials were revised or replaced, staff roles were redefined, program components were added, or dropped, and student activities were redesigned" (Farrar, De Sanctis & Cohen, 1980, p. 169).

Each of the four laboratories has developed certain components that have become widely used outside of high fidelity EBCE programs. For example, Northwest Regional Education Laboratory has developed and refined six learning strategies and eight management strategies (Hunter, 1980). The Appalachia Educational Laboratory developed the Iowa Model Projects for general education and special education. The AEL expanded the original list of 16 EBCE courses to a listing of 32 and included a major agriculture related program.

Over 100 separate evaluation reports have been prepared dealing with EBCE project findings, together with cross-project evaluations; syntheses of other evaluations; follow-up studies, and special studies by agencies such as the Huron Institute, which have focused on EBCE implementation issues.

National demonstration site findings

The external evaluation of the four demonstration sites was conducted by Educational Testing Service (Watkins & Corder, 1977). Conducted in the school year that started in the fall of 1974, the ETS
evaluation was based primarily on the use of the Comprehensive Test of Basic Skills, in-depth interviews of EBCE and control group students, survey questionnaires, and ethnographic studies by trained anthropologists. The ETS evaluators concluded that:

EBCE students tend to have some interest in and knowledge of a greater number of career areas than do control group students.

EBCE students know more of the personal and school-related characteristics and abilities that are necessary for entry into careers of interest than do control counterparts.

EBCE students are more positive than control groups in their attitude toward career planning, feeling that they can have some control over choices of careers and can consider a variety of careers.

EBCE students are better able than control groups to respond orally to interviewers' complex questions, providing answers that are to the point and brief. There is no evidence from the test of basic skills that EBCE participation has resulted in either any particular gain or loss in reading or mathematics achievement for the enrolled students. However, EBCE students were significantly more consistent than control groups in choosing careers of interest that were compatible with knowledge they have of themselves.

Enrolled students look upon their EBCE experiences with strong positive feelings. Nearly all students interviewed say they would enroll again in EBCE if given the opportunity. Control students are aware of this aura of good feeling, and a high majority indicate that they would like to apply again for enrollment. The desire to enter EBCE school programs seems to come from a desire of both enrolled students and controls to be provided with the career-related features central to the model, rather than to escape from the traditional high school.

Resource persons and organizations state a strong belief in the need for a program which assists students in the transition from school to work. Parents, former students, and enrolled students agree that the career- and community-related experiential opportunities provided through resource organization cooperation are the most productive and best-liked features of the program.

The EBCE experiences are seen by all respondent groups as important and useful preparation for the adult world. A consistent finding (as noted through student behavior during the in-depth interview) associated with preparation for the
adult world is that EBCE students appear to face the future with more confidence, feeling that they can have some control over their choice of careers, can consider a wide variety of careers, and know more of the required characteristics for entry into a career path than do control students.

In addition to the major project conducted by ETS, a two-year effects study was conducted by Research for Better Schools (RBS). During the years of 1975-1977, workers studied the effects of EBCE upon students who were in the RBS EBCE demonstration program for two years. This study was based on the performance of 68 EBCE students and 36 control group students in Philadelphia in the areas of career skills, life skills, and basic skills (Biester & Kershner, 1979).

The RBS study of the cumulative effects of two-year participation demonstrates real advantages in longer student involvement in EBCE. At RBS, second year students not only replicated first-year growth, but also exhibited additional growth in career maturity, self-concept, and reading comprehension. In comparing EBCE and control group student performance during the second year, EBCE student outcomes were significantly superior to control group performance in career maturity, learning-related attitudes, self-concept, and basic skills. Over the two-year cumulative study, EBCE students showed significant superiority to the control group's performance in career skills, in life skills, and in the arithmetic area of basic skills.

Additional research in the mid-life stage of EBCE nation-wide dissemination was the first (and only major nation-wide effort) graduate follow-up of students. The National Institute of Education funded a
graduate follow-up study across the four demonstration sites. This study was undertaken by Research for Better Schools in 1978, in cooperation with three other laboratories. The primary method of research was the use of the Career Development Survey. This instrument, developed by RBS over a one-year period, was completed by 166 out of 492 (34%) former students; 103 were 1975 EBCE graduates and 63 were control group members. The RBS investigators concluded that:

Low survey response rates seriously jeopardized the true experimental designs. Significant response biases resulted and respondent groups were found to be nonrepresentative and non-comparable. With regard to the information which was received from the respondent groups, the overall results of the EBCE respondent group were very favorable. Graduates were engaged in a variety of positive career activities, effects in career skills and life skills were very positive, and EBCE respondents' retrospective views of their program experiences were extremely favorable. Although experimental group responses seem to be slightly more favorable than control group responses in several areas, statistically significant results were found in only a few areas (Biester & Kershner, 1979, pp. 9-10).

A second follow-up study of EBCE graduates was conducted by Ronald Fritchley of the Pioneer Cooperative Educational Service Agency (CESA) in Cleveland, Georgia, as a part of his dissertation. June 1977 EBCE graduates were surveyed in the fall of 1978. Many of the data analyses were performed by NWREL. Forty-five graduates and a matched sample of 45 comparison group students were surveyed using the RBS Career Development Survey.

In general, the EBCE students were significantly more satisfied with their current work and/or education than were the comparison group students, they also were more positive about the helpfulness of services received, and preferred to use
experiential approaches in exploring new careers in their future. No significant differences were found between the groups on their attitudes toward career plans, self-concept, social-interpersonal skills or attitudes toward responsibility as measured by the Career Development Survey (Owens, 1979, p. 6).

State dissemination project findings

Individually funded state EBCE projects designed and carried forth various summative and formative evaluations. Summaries of state project results that are available for public review are as follows:

**Maine.** Evaluations of EBCE students produced a mixture of results. Bagley & Hamlin (1979) found EBCE students are rated as more mature by themselves, parents, and learning coordinators, and as better young workers by employers. Benefits to students were realistic job and work experience; learning self-discipline; a chance to mature; learning to consider alternatives in planning; and good preparation and motivation.

**Kansas.** Kansas State University, Manhattan, Kansas, Center for Extended Services noted the following in evaluation of State Fair Community College EBCE program in 1978-79. Results indicate: 1) maintenance of some academic skills; 2. increase in attitudes of planfulness; 3. positive attitudes toward community and school (males); and 4) increase in knowledge and use of resources in nontraditional occupations (females) (Neely, 1979). The 1979-80 evaluation showed mixed results: Although all EBCE students met the objective of maintaining an acceptable level of performance in academic skills, they varied in attaining the objectives related to acquiring positive work habits, positive attitudes, and career decision-making skills. The evaluator
recommended a follow-up study of EBCE (Neely, 1980).

**Tennessee** A third-party evaluation was designed to document the processes undertaken to implement a Memphis EBCE program. EBCE students' scores on the Knowing Yourself Career Maturity Inventory sub-scale increased significantly and students held positive opinions about their EBCE experiences. Community groups felt the program improved students' learning about careers but not general learning. Parents held overall positive opinions (Miller & Wilkins, 1979).

**Minnesota** Evaluation of Anoka-Hennepin Independent School District 11 (1980) identified the EBCE program as a strong, viable alternative school plan. Both current and former students and parents were extremely positive about the program.

**Rhode Island** Evaluation of EBCE has not produced exclusively positive results. The third year (1978-79) evaluation of a Kingston EBCE project indicated: EBCE student showed no significant increase in career maturity, career knowledge, learning attitudes, or self-concept (Rhode Island University, 1979).

**West Virginia** Seyforth, Sanders, and Bertram (1973a) observed that parents' criticisms generally focused on the program's permissiveness. They further stated in another report (1973b) that when comparing student outcomes to program objectives, it was noted that students' career decision-making ability and their planning skills were insufficiently developed. It was observed that such traits as learning attitude maturity, cognitive skills, personal adjustment, social adjustment, and flexibility seem not to have been affected by the EBCE
program. Ranson, Sanders, and Bertram (1973) supported this lack of impact of EBCE, noting that examination of nine student attitudes revealed that none appeared to have been affected after exposure to EBCE.

Iowa Carl Larson (1979) noted the evaluation of the EBCE project required a pre- and post-evaluation of EBCE students and a control group. The employers and parents were surveyed to obtain their perspectives. Evaluations dealing with achievement in basic skills, attitude changes toward education, and sex-role stereotyping and career maturity indicated the same or greater growth for the EBCE students.

Student surveys indicated that the students liked the program. It helped them to learn more about careers, become more independent, self-confident, and responsible individuals.

Parents surveyed have a very positive attitude toward EBCE. Of the parents surveyed, 82.5% felt their students were better off in EBCE than in the regular classroom.

Employers were very much in favor of EBCE. Ninety-six percent of the 598 surveyed indicated they would recommend other businesses to participate. Ninety-five percent said they wanted to continue in the program.

Summary

The literature reviewed in this chapter focused on the theories of career choice, the foundations of career education as a national movement and the background of Experience Based Career Education.

As a result of reading the literature about the various theories
of career choice, it can be summarized that the classical and contemporary theorists agree that there are stages to the developmental process. One of the stages of phases that was agreed upon by all was the exploration step in early adolescence that is needed before actual career preparation or training.

After presenting the background of the national project called Career Education, the emergence of Experience Based Career Education was examined. From 1976 through 1979, EBCE was the major national project at four research centers where students were exploring the world of work in a unique way.

The nationally funded exemplary programs collected summative and formative data which was summarized from available state reports. When examined during enrollment in EBCE, students involved appeared to be favorable about the project. Many researchers cited the interest in following graduates after the pilot project stages. On a national level, research was conducted by Educational Testing Service, Research for Better Schools, and Pioneer Cooperative Educational Service Agency (CESA) with subsequent analysis by the Northwest Regional Education Laboratory. Although the four national research projects produced "interesting" results, the numbers of students who responded were extremely low and the findings were not collected from a national sample over a period of time after students had entered life's work or training.

The Nationwide Followup Study of Graduates is presented herein as the first major effort to determine program effectiveness as viewed by participants three to five years after graduation.
CHAPTER III. METHODOLOGY

This chapter contains a description of the procedures adopted for the study of Experience Based Career Education graduates. The procedures have been divided into the following sections:

(1) Definition of the population and identification of sample.
(2) The development of the instrument and subsequent pilot testing.
(3) Data collection and recording.
(4) Data analysis.

Definition of the Population and Identification of Sample

This study was designed to investigate the effects of Experience Based Career Education upon personal-social skill development and acquisition of world-of-work skills. The target population included students who had graduated from schools where they participated in EBCE in one of 80 model programs from the years 1978-1982.

Experience Based Career Education was designed by and implemented with funding from the U.S. Office of Education through a Part D Adult and Vocational Act from 1976-1979. Through the efforts of four regional research laboratories, EBCE was established in at least one area of each of the fifty states as a demonstration site. In a 1982 Meta Analysis Report of EBCE, the National Institute of Education (charged with the internal and external evaluation of the programs) cited 80 official demonstration or model programs (Bucknam & Brand, 1982).

Due to the nature of the first and major round of federal government
support, the major EBCE efforts were demonstrated from 1976-1979. Since students could have entered the program as late as 1979 and could be in any senior high school from freshman through senior year, the years of 1978-1982 were used. As with any major national effort, there were program adaptations and program changes made by personnel after an initial research state. This research project surveyed only those students who were graduates from the 80 high fidelity program models whose learning coordinators were available to participate in this research project.

In order to determine the sample size, several major steps occurred. The first major activity was to contact the Board of Directors of the National Experience Based Career Education Association for assistance in the location of the leaders of the 80 model programs. In 1979, the U.S. Office of Education formally ceased the funding pattern and the regional laboratories were left to continue dissemination with the various state departments of education. Reporting and record-keeping after 1979 was not required by the Federal Government so there were no readily available lists of the program sites and project directors.

The president of the National EBCE Association gave the researcher access to the mailing addresses of the individuals who remained active in the organization. The mailing list was last prepared in 1979 and contained the names of 190 learning coordinators (Rhulin-Cloyd, 1979). Director Rhulin-Cloyd indicated that the Spring Convention of the National Association of Experience Based Career Education leaders was to be held in Orlando, Florida in 1983. The researcher was given program time at the convention to poll the directors, update addresses, and
solicit volunteers who would participate in the piloting of an initial instrument. A careful check was made to see that all would-be volunteers were coordinators of model programs only. The coordinators in attendance at the Spring 1983 School and Work Transitions Conference officially endorsed the nationwide survey of graduates and entered the Board of Directors' approval in the minutes of the Spring meeting (Rhulin-Cloyd, 1983).

In the spring of 1983, two major research activities took place. The first was the contacting of every available EBCE Demonstration Model coordinator to inquire about the potential size of the graduating classes from EBCE programs in the years of 1978-1982. The second activity was the development of an instrument and the subsequent piloting of that instrument in 13 public school systems across the nation. The instrumentation process will be discussed subsequently.

In order to complete the first activity, a comparison was made with the names and addresses in the 1979 Directory, the 1982 Directory, and the National Association mailing list. A preliminary research survey was mailed to 82 project leaders. A self-addressed, stamped postcard was included for easy response. The preliminary survey asked how many teachers would be willing to locate a sample of graduates from the years 1978-1982 (Appendices A and B).

The results of the preliminary survey are shown in Table 1. The total number of responses was 72 (88%). The 18 coordinators who returned the cards and said that they could not participate listed the following reasons: project discontinuance, numbers too small to sample, version
of EBCE was too different from original model, students have been "over- 
surveyed", and special education students enrolled changed nature of 
offerings. Five additional surveys were returned by the U.S. Post Office 
Stamped undeliverable.

Population

The target population, after preliminary updating of addresses and 
Investigation of project coordinators willingness to cooperate, became 
the source of students from 54 model projects who graduated from high 
schools during the years of 1978-1982.

Due to a serious illness of the researcher, an interruption in the 
project occurred at the initial stage of investigation. Eight months 
(nearly one school year) passed between the time the project leaders 
were originally contacted and the time that the final instrument was 
available to mail to students. When the researcher made attempts to 
recontact the EBCE coordinators, it was determined that the number will- 
ing to cooperate had reduced to 45. The reasons cited for inability to 
participate at this time included disinterest in the program, program dis- 
continuance, need to collect data on their own, and undeliverable mail.

Table 1. The results of the preliminary survey

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>54</td>
</tr>
<tr>
<td>no</td>
<td>18</td>
</tr>
<tr>
<td>TOTAL</td>
<td>72</td>
</tr>
</tbody>
</table>
The preliminary surveys from the 45 learning coordinators provided the following information:

Regional Laboratory responsible for the model program being utilized: (Northwest Educational Laboratory, Farwest Educational Laboratory, Research for Better Schools or Appalachia Educational Laboratory)

Category of school program the enrollees followed, General or Special Education

Average length of time students were enrolled in the programs

The inclusion or exclusion of related academic work in the EBCE program

The average number of students who benefit from instruction each week

When these coordinators were contacted again for the second time, it was determined that six of the programs would not be a part of the research. The six had numbers of graduates that were too low to sample (fewer than five students) and/or the projects had abandoned the exploratory nature of the program and had moved to a paid work experience basis. One of the projects was eliminated because the students were placed on job sites with no teacher contact during the week for the EBCE course development.

In summary, the participating projects whose results and surveys were analyzed by this researcher were shown in Tables 2 and 3.

The sample selected ultimately for the National EBCE study was based upon a sample drawn from an experimentally accessible population (Borg & Gall, 1979). The available population is closely comparable to the target population as verified by the National Institute of Education's
Table 2. Project schools participating in national EBCE study from 1978-1982a

<table>
<thead>
<tr>
<th>Estimated number of graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools in Pilot Project only</td>
</tr>
<tr>
<td>Orlando, Florida</td>
</tr>
<tr>
<td>Palm Beach, Florida</td>
</tr>
<tr>
<td>Rockville Centre, New York</td>
</tr>
<tr>
<td>Orland, Maine</td>
</tr>
<tr>
<td>Fayette County Schools, Lexington, KY (3 buildings)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schools in Pilot Project and Experimental Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm Lake, Iowa</td>
</tr>
<tr>
<td>Highland Park, Illinois</td>
</tr>
<tr>
<td>Portland, Oregon</td>
</tr>
<tr>
<td>Tigard, Oregon</td>
</tr>
<tr>
<td>New Berlin, Wisconsin</td>
</tr>
<tr>
<td>Granada Hills, California</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schools in Experimental Project only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anoka-Hennipen, Minnesota</td>
</tr>
<tr>
<td>Salt Lake City, Utah</td>
</tr>
<tr>
<td>Lander, Wyoming</td>
</tr>
<tr>
<td>Indianapolis, Indiana</td>
</tr>
<tr>
<td>Cheyenne, Wyoming</td>
</tr>
<tr>
<td>Kansas City, Missouri</td>
</tr>
<tr>
<td>Grand Rapids, Michigan</td>
</tr>
<tr>
<td>Pocatello, Idaho</td>
</tr>
<tr>
<td>Barnum, Iowa</td>
</tr>
<tr>
<td>Flint, Michigan</td>
</tr>
<tr>
<td>Ogden, Utah</td>
</tr>
<tr>
<td>Humboldt, Iowa</td>
</tr>
</tbody>
</table>

*Number is estimated from preliminary survey and/or National Directory Information. The schools listed above have varying numbers because of staff size and number of years from 1978-1982 they were in operation.*
<table>
<thead>
<tr>
<th>School Location</th>
<th>Estimated Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laramie, Wyoming</td>
<td>120</td>
</tr>
<tr>
<td>Birmingham, Alabama</td>
<td>125</td>
</tr>
<tr>
<td>Mapleton, Iowa</td>
<td>30</td>
</tr>
<tr>
<td>Clinton, Iowa</td>
<td>30</td>
</tr>
<tr>
<td>Minot, North Dakota</td>
<td>25</td>
</tr>
<tr>
<td>Las Cruces, New Mexico</td>
<td>200</td>
</tr>
<tr>
<td>Kennewick, Washington</td>
<td>140</td>
</tr>
<tr>
<td>Muscatine, Iowa</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,777</strong></td>
</tr>
</tbody>
</table>

**Schools in Control Group**

<table>
<thead>
<tr>
<th>School Location</th>
<th>Estimated Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ames High School</td>
<td>100</td>
</tr>
<tr>
<td>Cedar Rapids Jefferson High School</td>
<td>110</td>
</tr>
<tr>
<td>Cedar Rapids Kennedy High School</td>
<td>90</td>
</tr>
<tr>
<td>Cedar Rapids Washington High School</td>
<td>100</td>
</tr>
<tr>
<td>Jefferson High School, Jefferson</td>
<td>75</td>
</tr>
<tr>
<td>Des Moines Tech High School</td>
<td>160</td>
</tr>
<tr>
<td>Fort Dodge High School</td>
<td>110</td>
</tr>
<tr>
<td>Fort Madison High School</td>
<td>100</td>
</tr>
<tr>
<td>Mason City High School</td>
<td>100</td>
</tr>
<tr>
<td>Webster City High School</td>
<td>75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,777</strong></td>
</tr>
<tr>
<td>Location</td>
<td>Potential number of graduates</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Storm Lake, IA</td>
<td>175</td>
</tr>
<tr>
<td>Highland Park, IL</td>
<td>75</td>
</tr>
<tr>
<td>Tigard, OR</td>
<td>150</td>
</tr>
<tr>
<td>New Berlin, WI</td>
<td>120</td>
</tr>
<tr>
<td>Granada Hills, CA</td>
<td>26</td>
</tr>
<tr>
<td>Anoka-Hennepin, MN</td>
<td>200</td>
</tr>
<tr>
<td>Salt Lake City, UT</td>
<td>240</td>
</tr>
<tr>
<td>Lander, Wyoming</td>
<td>150</td>
</tr>
<tr>
<td>Indianapolis, IN</td>
<td>250</td>
</tr>
<tr>
<td>Cheyenne, WY</td>
<td>100</td>
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<tr>
<td>Kansas City, MO</td>
<td>60</td>
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<tr>
<td>Grand Rapids, MI</td>
<td>120</td>
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<tr>
<td>Pocatello, ID</td>
<td>100</td>
</tr>
<tr>
<td>Barnum, IA</td>
<td>75</td>
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<td>Flint, MI</td>
<td>60</td>
</tr>
<tr>
<td>Ogden, Utah</td>
<td>350</td>
</tr>
<tr>
<td>Humboldt, IA</td>
<td>50</td>
</tr>
<tr>
<td>Laramie, WY</td>
<td>120</td>
</tr>
<tr>
<td>Birmingham, AL</td>
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<tr>
<td>Mapleton, IA</td>
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<td>Clinton, IA</td>
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<td>Minot, ND</td>
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<td>Las Cruces, NM</td>
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<td>Kennewick, WA</td>
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<tr>
<td>Muscatine, IA</td>
<td>30</td>
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<tr>
<td>Unidentified (misc.)</td>
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<tr>
<td><strong>TOTALS</strong></td>
<td><strong>860</strong></td>
</tr>
</tbody>
</table>
Meta Analysis Report of 1982. In that report, the fidelity of the 80 major EBCE projects was examined. This sample was drawn from that pool of 80 projects.

The proportional sampling technique was used to select the high school groups that would be the subject of the National EBCE Graduate Follow-up Study.

No previous graduate follow-up studies have been conducted. Thus it was impossible to utilize previous research in order to determine the approximate amount of difference in the variables to expect. Based on the estimate of the total population of graduates at 3,757, it was determined that approximately ten percent of the total would be surveyed. Coordinators were asked to randomly select students from the school class years of 1978-1982. Again, it must be noted that some of the projects had only been in existence for a year while others had been in existence all five years.

As the initial stages of research progressed, participating learning coordinators were asked to locate at least 10% of their graduates. Several (11) preliminary surveys returned by coordinators indicated their willingness to locate far more than 10% of the students. Many EBCE Learning Coordinators used the National Survey of Graduates as a local evaluation instrument. In the final analysis, a total of 6 schools mailed considerably more than the minimum number of surveys.

One thousand surveys were ultimately mailed. One hundred forty surveys were sent to the pilot group. Eight hundred sixty questionnaires were mailed to the experimental group. A total of 95 surveys of the
original 140 in the pilot were returned at a rate of 67.9%. Five hundred ninety of the experimental 860 surveys were returned in the experimental group for a total of 68.6%. The total number ($N$) utilized in the research experimental group is 666.

The next major step in the definition of the population and identification of sample involved the selection of a control group. After reviewing the State Department of Public Instruction's Guidelines for Cooperative Education Programs, it was determined that students in this program are similar to students in EBCE in the following ways: a) age, b) socio-economic background, and c) geographic location. The programs have many similar characteristics:

1. Both EBCE and Cooperative Education Programs are designed to allow students real "life" experiences in the world-of-work.
2. Both programs have a model of classroom instruction that is related.
3. Both programs involve extensive public relations programs that access the local community to the students.
4. Both programs involve extensive public relations programs that access the local community to the students.
5. Both programs enable the students to enroll in world-of-work experiences for academic credit toward graduation.
6. Both programs involve a job or training plan based upon a detailed analysis of the tasks to be explored.

The major program differences are as follows:

1. EBCE students take subjects experientially and may utilize
a job site for the obtaining of an English, Math, or other subject credit.

2. EBCE students focus on exploration of several job sites each semester. Cooperative Education students may remain for long periods of time at one site in order to prepare fully for that job or career field.

3. EBCE is a program for exploration and Cooperative Education is a program for preparation. EBCE students often enroll in a cooperative education program as a result of involvement in their exploratory program.

4. Students in Coop programs are paid an hourly wage. EBCE students may not accept a wage for the exploration experiences.

5. The EBCE teacher-student ratio is low; often as intensive as ten-to-one. The Coop Teacher Coordinator can serve as many as 50 students at a time.

In order to solicit the assistance of Cooperative Education Teacher Coordinators to survey their graduates from the years of 1978-1982, the Chairman of the Department of Industrial Education at Iowa State University was contacted. A random selection was made of instructors in the State of Iowa for inclusion in the control group sampling. It was determined that the control group would be approximately 10% the size of the national EBCE experimental group. Table 4 lists the various control groups and the survey return rate. Slightly more surveys were mailed percentage-wise to the control group than the experimental group. It was determined that the control group students had less vested interest
Table 4. Control group survey return summary, actual study

<table>
<thead>
<tr>
<th>School</th>
<th>Potential number of graduates</th>
<th>Number of graduates sampled</th>
<th>Number of surveys returned</th>
<th>Percent of return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ames</td>
<td>100</td>
<td>15</td>
<td>11</td>
<td>73.3</td>
</tr>
<tr>
<td>Cedar Rapids Jefferson</td>
<td>110</td>
<td>15</td>
<td>6</td>
<td>40.0</td>
</tr>
<tr>
<td>Cedar Rapids Kennedy</td>
<td>90</td>
<td>15</td>
<td>9</td>
<td>60.0</td>
</tr>
<tr>
<td>Cedar Rapids Washington</td>
<td>100</td>
<td>15</td>
<td>7</td>
<td>46.7</td>
</tr>
<tr>
<td>Jefferson</td>
<td>75</td>
<td>15</td>
<td>9</td>
<td>60.0</td>
</tr>
<tr>
<td>Des Moines Tech</td>
<td>160</td>
<td>15</td>
<td>13</td>
<td>86.7</td>
</tr>
<tr>
<td>Fort Dodge</td>
<td>110</td>
<td>15</td>
<td>14</td>
<td>93.3</td>
</tr>
<tr>
<td>Ft. Madison</td>
<td>100</td>
<td>15</td>
<td>7</td>
<td>46.7</td>
</tr>
<tr>
<td>Mason City</td>
<td>100</td>
<td>15</td>
<td>8</td>
<td>53.3</td>
</tr>
<tr>
<td>Webster City</td>
<td>75</td>
<td>15</td>
<td>9</td>
<td>60.0</td>
</tr>
</tbody>
</table>

**TOTALS**          | 1,020                         | 150                        | 93                        | 62.0              |

*All students in the control group were from Iowa high schools.*
in assisting with the project than did the experimental group. An examination of the results indicates that 62% of the surveys were returned. That rate is just slightly lower than the experimental group return rate. Note that the return rate of the control group is higher in Fort Dodge and Ames, the two home communities of the researcher where the coordinators are known on a personal basis.

Development of the Instrument
Pilot Testing of the Instrument

The instrument used to gather the data for this study is the Graduate Survey Form which is included in Appendix C. It is a self-administered questionnaire consisting of three sections.

For guidelines in developing the follow-up survey objectives, the Thompson list of 24 specific guidelines for surveys was cited (1978, pp. 124-125). The 24 guidelines were applied to the following general areas of questions about EBCE:

1. Demographic data
2. Inquiries about personal-social skills developed through EBCE
3. Information about the relationship of exploration to preparation
4. Specifics that relate the individual student's experience with EBCE
5. Inquiries about the student's present occupation.

Using guidelines of previous researchers, a nation-wide pilot of the instrument was conducted. Student respondents and cooperating
teachers were asked to comment on the process of distribution and fill out the first draft of the instrument for an initial reliability rating (Borg & Gall, 1979).

The first section of the questionnaire contains seven questions designed to identify the overall level of satisfaction that the student had with the Experience Based Career Education Program. The questions ask the student to record willingness to participate again, the ability the project had to assist with career and educational selection, the attitude toward work and school as a result of EBCE and opinion about the teacher involvement. A total of seven items are listed in Section I.

Section two asks students to record the extent to which EBCE was helpful in assisting them to develop world-of-work skills and personal social skills. Separate sub-questions deal with self-awareness, self-confidence, relationship to co-workers, goal-setting, problem-solving, preparation for jobs, thought organization, and preparation for further training. A five-point Likert scale of response was used. Students indicated the extent to which EBCE was very helpful, helpful, somewhat helpful, little help or no help in the development of the world-of-work skill or the personal-social skill. A value of five was assigned to very helpful and other categories were placed in a descending value. Twenty items are included in section two.

Section III of the questionnaire requested each respondent to answer a series of questions in regard to programmatic descriptions. Students listed the number of total semesters they were enrolled in EBCE, their
present age, sex, grade level while attending the program, and approximate city size where the job site placements occurred. Questions in section three asked for student graduates to describe previous work experience, the present employment status, and extent to which EBCE led to the current status. The final questions deal with the day-to-day operations of the program. Students describe the amount of time the Learning Coordinator spent with them each week, the number of total job sites explored, the clock hours spent on the job each week, and the academic courses that were combined with EBCE credit. Twelve items are included in section III.

The initial instrument was based on a questionnaire developed by Edwin L. Sullivan, a researcher for Mankato State University, Mankato, Minnesota (Sullivan, 1982). The Sullivan instrument was a 31-item survey that was used with graduates of an Iowa Central Community College sponsored EBCE program in 1982. That instrument had the same basic areas and worked toward identifying for the researcher the extent to which EBCE assisted with the development of world-of-work skills and the development of personal-social skills. This instrument was used with 62 graduates of an EBCE program identical to the programs surveyed in this major research effort. The Sullivan research was conducted and data were analyzed on the descriptive statistics level only. Several changes in the items occurred in order for the data in the national study to be recorded and analyzed by computer using inferential statistic.
Pilot testing

Since the Sullivan instrument was not checked for validity and reliability, a pilot study of the instrument (as amended) occurred. Thirteen schools were selected for the nation-wide pilot of the instrument. These schools were selected and identified by the officers of the National Association of Experience Based Career Education. The learning coordinators of these thirteen schools were interviewed in person by the researcher to insure the willingness to cooperate.

Table 5 on the following page describes the breakdown of the pilot study. A total of 140 graduates were sampled. Ninety-five students returned the instruments (after two additional reminders) for a return rate of 67.85%. A cover letter was developed to identify the researcher and the purpose of the pilot and final studies. Each questionnaire was printed on two sheets of paper with a total of four sides of copy and 39 items. A self-addressed stamped envelope was included with each of the 140 sets mailed. The thirteen sets of questionnaires were mailed directly to the learning coordinators in packets and the learning coordinator affixed the individual student graduate's address. The cover letter was prepared in camera-ready form so that it could be co-signed by the local coordinator (see Appendix D).

To analyze the results of the pilot instrument, the Hoyt: A by S Anova and Intraclass Reliability program was used (W. G. Miller, Educational Statistics Package, 1983). The results appear in Table 6.

The reliability rating according to two test runs using the Hoyt: A by S Anova and Intraclass Reliability program was .84. This was deemed
Table 5. Experimental group survey return summary, pilot study

<table>
<thead>
<tr>
<th>Location</th>
<th>Potential Number of Graduates</th>
<th>Number of Graduates Sampled</th>
<th>Number of Surveys Returned</th>
<th>Percent of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granada Hills, CA</td>
<td>26</td>
<td>10</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Highland Park, CA</td>
<td>75</td>
<td>10</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>Lexington, KY</td>
<td>(3 schools)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>30</td>
<td>19</td>
<td>63</td>
</tr>
<tr>
<td>New Berlin, WI</td>
<td>120</td>
<td>10</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>Orland, ME</td>
<td>36</td>
<td>10</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Orlando, FL</td>
<td>60</td>
<td>10</td>
<td>7</td>
<td>70</td>
</tr>
<tr>
<td>Palm Beach, FL</td>
<td>60</td>
<td>10</td>
<td>6</td>
<td>60</td>
</tr>
<tr>
<td>Portland, OR</td>
<td>150</td>
<td>20</td>
<td>19</td>
<td>95</td>
</tr>
<tr>
<td>Rockville Centre, NY</td>
<td>120</td>
<td>10</td>
<td>4</td>
<td>40</td>
</tr>
<tr>
<td>Storm Lake, IA</td>
<td>175</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Tigard, OR</td>
<td>150</td>
<td>10</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>1,272</strong></td>
<td><strong>140</strong></td>
<td><strong>95</strong></td>
<td><strong>68</strong></td>
</tr>
</tbody>
</table>

*Original pilot included 95 surveys. Seventy-six were included in group considered for experiment. Portland, Oregon group of 19 was not coded in final study. (Misplaced.)*

Table 6. Reliability rating of pilot instrument

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>MS</th>
<th>D.F.</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between</strong></td>
<td>515.90</td>
<td>5.49</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td>2,398.14</td>
<td>0.97</td>
<td>2,470</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>269.48</td>
<td>10.36</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>2,128.66</td>
<td>0.87</td>
<td>2,444</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>2,914.05</td>
<td>1.14</td>
<td>2,564</td>
<td></td>
</tr>
</tbody>
</table>

Reliability of ratings = 0.82
Reliability of ratings adjusted for means = 0.84
Reliability of single rating = 0.04
Adjusted reliability of single rating = 0.16
a high enough rating to continue research using the same items as were included on the pilot instrument (see Appendix E for pilot instrument). There were, however, some narrative comments from the students and Learning Coordinators that led to a few minor changes in the instrument design:

1. Learning Coordinators reviewing the form indicated that it could be shortened with smaller type and different typewriter spacing.
2. For true anonymity, student names should be omitted.
3. Since surveys could be coded by the various towns, the school, city, and state lines could be eliminated.
4. Instead of a brief listing of one to four semesters of involvement, Learning Coordinators wanted to know the exact years students were involved.
5. The last two items on page three were combined into one longer item with a simple listing.
6. Since the research was not intended to compare the four models of EBCE, the question asking students to list the models was eliminated.

The final instrument was three and one-third pages long instead of four long pages. Students who used the revised instrument were able to use remaining space for personal comments. There were not changes made in the items that provided data for the major research hypotheses. The order of placement of two items was altered in the revised form. Background information was placed later in the survey after students
indicated satisfaction or dissatisfaction with the final program.

Data Collection and Recording Procedures

As indicated earlier in this chapter, a two phase process of research took place. The first steps centered around the major task of identifying the available project personnel to assist with the location of graduates. The second phase, including the piloting of the instrument, was the actual mailings of the questionnaires to pilot group students, experimental group students, and control group students. Additional steps included:

1. Several letters of correspondence with the Learning Coordinators who assisted the researcher at the local level (see Appendix F).
2. The preparation and printing of computerized mailing labels so that the Learning Coordinators could use all pre-addressed, stamped materials.
3. Personal interviews with the initial participating Learning Coordinators for the establishment of the dates and times for pilot testing.
4. Phone calls to the Learning Coordinators who were sent packets and whose students did not respond at all.
5. A first mailing to students who did not respond.
6. Phone calls (second reminders) to coordinators whose students did not respond.
7. Final letters to actual students who did not respond.
There were several techniques used to determine student's perception of the effects of Experience Based Career Education upon the development of personal-social skills and the acquisition of world-of-work skills. Computer analysis was completed at Iowa State University using the Statistical Package for Social Science* as a framework.

There were two different sets of independent variables. The first set were considered student variables and the second set were considered program variables. A stepwise multiple regression technique was employed to investigate the relationship among these multivariates for the control group and experimental group to find out which factors influenced the development of personal-social skill and world-of-work skill. Fourteen different items on the Graduate Survey led to a student's "score" for personal-social skill and twelve different items contributed to each individual's world-of-work score.

The basic multiple regression model which was used in this study for hypotheses 1 and 2 is stated below:

\[ Y_1 = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_{10}X_{10} \]

where:

- \( Y_1 \) = perception of personal-social skills (Hypothesis 1)
- \( Y_1 \) = perception of world-of-work skills (Hypothesis 2)
- \( X_1 \) = age
- \( X_2 \) = gender
- \( X_3 \) = community size
- \( X_4 \) = grade level
- \( X_5 \) = childhood part-time jobs, 1 = checked, 0 = not checked
X₆ = community volunteer work, 1 = checked, 0 = not checked
X₇ = previous work 10-20 hours per week, 1 = checked, 0 = not checked
X₈ = 2 or more part-time jobs, 1 = checked, 0 = not checked
X₉ = full-time job, 1 = checked, 0 = not checked
X₁₀ = 1 = EBCE, 0 = Control

When the regression analysis was completed and one of the individual independent variables contributing to the personal-social skills investigated in Hypothesis 1 was sex, further analysis using the T-Test was conducted to examine the difference between males and females in the control group and the experimental group. The probability level of this study was selected at .05.

Stepwise multiple regression analysis was also employed to investigate the relationship between the program characteristics that led to student's perception of personal-social skill and world-of-work skill.

The basic model which was used in this study for hypotheses 3 and 4 is stated below:

Y = Personal-social skills
Y = World-of-work skills
X₁ = Appalachia Educational Laboratory Model, 0 = Otherwise
X₂ = Far West Laboratory Model, 0 = Otherwise
X₃ = Northwest Laboratory Model, 0 = Otherwise
X₄ = Research for Better Schools Model, 0 = Otherwise
X₅ = Executive Internship Model, 0 = Otherwise
X₆ = One-to-one basis supervision, 0 = Otherwise
\[ X_7 = \text{One coordinator for job placement and subject matter, } 0 = \text{Otherwise} \]
\[ X_8 = \text{Two different coordinators, } 0 = \text{Otherwise} \]
\[ X_9 = \text{Number of semesters in program} \]
\[ X_{10} = \text{Number of sites explored} \]
\[ X_{11} = \text{Amount of time at job site each week} \]
\[ X_{12} = \text{Use of related curriculum} \]

Hypotheses 3 and 4 apply only to the Experience Based Career Education group. There are unique features of the EBCE programs as disseminated through the four research branches of the National Institute of Education during the 1970s that do not apply to the cooperative education program. EBCE students had three different types of program supervision whereas the Coop programs were established primarily with one supervising teacher. EBCE students primarily explore a different job site every four to six weeks while students in Cooperative education are placed at one job site on a paid basis for training. The other major difference is that EBCE students are heavily involved in experiential learning and any one of several academic classes can actually be taken at the job site. The Coop students were enrolled only in the related course of career development. Therefore, research hypotheses 3 and 4 seek to examine the program variables of EBCE in attempt to discover which, if any of the program dimensions made a difference in student's perception of personal-social skill and world-of-work skill.

Twelve descriptive questions accompany the nationwide research project on the effects of Experience Based Career Education. The first
major step in presenting the results of the 759 EBCE and Cooperative Education surveys was to run a statistical program that would list the results of each item. For each response for each item, frequencies were listed and the full range of statistics (mean, mode, range, standard error, standard deviation, median and variance) was computed. In cases where the mean score of the experimental group seemed to be quite different from that of the control group, an additional measure, the T-Test, was employed to examine the significance of the difference.

Descriptive question 8 examined the relationship between student satisfaction with the program and the intensity of assistance from the teacher as measured by the amount of time spent with the coordinator. Pearson Correlation Coefficients were computed as the analysis for this question.
CHAPTER IV. FINDINGS

The data presented in this chapter were analyzed in relation to twelve research questions and four statistical hypotheses. Computer analysis of data coded from seven hundred fifty-nine (759) surveys was conducted using the Statistical Package for the Social Sciences (1983). Various analysis techniques included simple frequency listings, T Test, Pearson Correlation, Multiple Response and Stepwise Linear Regression. As each descriptive or research question is discussed, the analysis technique is indicated. Analysis of data was completed at Iowa State University Computer Center with assistance from the College of Education Institute for Studies in Education.

Descriptive Questions

1. What is the profile of the experimental group and the control group?

The control group consisted of 93 students who graduated from high schools in Iowa during the academic years 1978-1982. Forty-five (45) students were female and 47 were male. Ninety-one students (97.8%) were in Cooperative Education programs during their senior year. When polling the control group from the graduating classes of 1978-1982, the students selected were from ages 17-25. The average age of the students surveyed in the control group was 20.86 years old.

The Cooperative Education students were involved in their particular program one or two semesters. Forty-six and two-tenths (46.2) percent were enrolled for one semester. Fifty and one-half (50.5) percent were
enrolled for two semesters. They were placed at a wide variety of job sites (Table 7).

Table 7.

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Number of Students</th>
<th>Percentage of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>Cities less than 10,000</td>
<td>36</td>
<td>38.7</td>
</tr>
<tr>
<td>Cities 10,000 - 25,000</td>
<td>13</td>
<td>14.0</td>
</tr>
<tr>
<td>Cities greater than 25,000</td>
<td>89</td>
<td>95.8</td>
</tr>
</tbody>
</table>

When examining the students in Cooperative Education in attempt to determine the average number of job sites that the student explored, it was recorded that the overwhelming majority of students were placed at one site only: 72.0%. That single site experience involved work out of school more than 15 clock hours per week for 82.8% of the Co-op students.

The experimental group was comprised of 666 students who graduated from high school around the nation during the academic years 1978-1982. Fifty-six and three-tenths percent (56.3%) or 375 students were female. Forty-three and five-tenths percent (43.5%) or 290 students were male. Unlike the students in Cooperative Education who were overwhelmingly in their senior year when enrolled, the EBCE students were split between the junior and senior years. Three hundred fourteen students (47.1%) of the experimental group were juniors while 279 (41.9%) of the students were seniors.
When polling the experimental group from the graduating classes of 1978-1982, the students surveyed ranged in age from 16 to 26. The average age of the students when surveyed was 20.6 years old, nearly identical to that of the control group.

When examining the amount of time that EBCE students spent at job sites it was learned that 88.2 percent of the students were enrolled in one or two semesters. Forty-four and three-tenths percent (44.3%) were enrolled for one semester. The list of those who were involved for a total of two semesters included 42.5% of the EBCE group. An examination of the individual survey sheets revealed that when a student was enrolled for two semesters, those semesters were consecutive.

Table 8. Profile of experimental and control group students

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Experimental Group (N=666)</th>
<th>Control Group (N=93)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male students</td>
<td>43.5%</td>
<td>50.5%</td>
</tr>
<tr>
<td>Female students</td>
<td>56.3%</td>
<td>48.4%</td>
</tr>
<tr>
<td>Average age</td>
<td>20.60</td>
<td>20.86</td>
</tr>
<tr>
<td>Students enrolled in one semester</td>
<td>44.3%</td>
<td>46.2%</td>
</tr>
<tr>
<td>Students enrolled for two semesters</td>
<td>42.5%</td>
<td>50.5%</td>
</tr>
<tr>
<td>Senior Year Enrollment only</td>
<td>41.9%</td>
<td>97.8%</td>
</tr>
</tbody>
</table>
The community size breakout for the Experimental Group is shown in Table 9.

Table 9.

<table>
<thead>
<tr>
<th>Community Size</th>
<th>Number of Students</th>
<th>Percentage of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>73</td>
<td>11.0</td>
</tr>
<tr>
<td>Cities less than 10,000</td>
<td>109</td>
<td>16.4</td>
</tr>
<tr>
<td>Cities 10,000 - 25,000</td>
<td>109</td>
<td>16.4</td>
</tr>
<tr>
<td>Cities greater than 25,000</td>
<td>636</td>
<td>95.6</td>
</tr>
</tbody>
</table>

The number of sites explored by EBCE students was wide and varied. The numbers ranged from one to twenty different job sites explored. The greatest number of students explored from three to six sites. The mean number of sites was 5.12 and the mode was 4.0.

Table 10. Job sites explored

<table>
<thead>
<tr>
<th>Number of job sites explored</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three</td>
<td>132</td>
<td>19.8</td>
</tr>
<tr>
<td>Four</td>
<td>136</td>
<td>20.7</td>
</tr>
<tr>
<td>Five</td>
<td>86</td>
<td>13.1</td>
</tr>
<tr>
<td>Six</td>
<td>120</td>
<td>18.3</td>
</tr>
<tr>
<td></td>
<td>474</td>
<td>71.9</td>
</tr>
</tbody>
</table>

2. What percentage of students in the experimental group and the control group are presently employed?
Question 33 of the Graduate Survey asked respondents to list their present employment status. Figure 3 displays the results.

The percentage of students enrolled in two-year schools, part-time employment, the military, homemaking, and "other" categories was similar for the EBCE and the Cooperative Education students. Similarly, the percentages of students employed in both programs were close: 38.7% for Co-op and 40.8% for EBCE. The major difference came in the areas of education and employment. While 11.8% of the Co-op students enrolled in four-year college programs, there were 21.8% of the EBCE students enrolled in four-year colleges. Twenty-one and one-half percent (21.5%) of the Co-op students were unemployed at the time of the survey while only 3.9% of the EBCE students were unemployed.

Because of the great difference in the mean scores of EBCE students and Co-op students in regard to unemployment, a T-Test was computed to examine the significance of the difference. The populations from which the EBCE and Co-op samples were taken were homogeneous with respect to the dependent variable. The analysis of student unemployment by control group and experimental group is shown in Table 11. A significant difference was found between the mean unemployment rate for students in Cooperative Education and the mean unemployment rate for students in Experience Based Career Education. The null hypothesis that there was no significant difference between the unemployment rate among EBCE students and Coop students was rejected \( (t = 6.80, p < .001) \). The mean unemployment rate for EBCE students was .04 whereas the mean unemployment rate for students in Cooperative Education was .22 or nearly 18
Figure 4. Employment status of 1978-1982 EBCE and Cooperative Education students
percentage points higher.

Table 11. Analysis of unemployment rate by experimental group and control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op</td>
<td>93</td>
<td>.22</td>
<td>.41</td>
<td>6.80</td>
<td>0.000a</td>
</tr>
<tr>
<td>EBCE</td>
<td>658</td>
<td>.04</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at the .001 level.

3. What percentage of students in EBCE and Cooperative Education are presently employed in an area they explored through the program?

Students who participated in the Graduate Survey were asked to indicate the relationship of their present job (if employed) to their previous EBCE or Co-op job sites. Forty-three Co-op students (46.2%) indicated that their part-time employment, full-time employment or military assignment was related to their job site placement in high school. Three hundred forty (340) EBCE students or 51.1% indicated that their part-time employment, full-time employment or military assignment was related to their job site placement in high school.

4. What courses were selected most often by students who wanted to learn experientially?

The SPSSx Multiple Response Procedure was used to analyze the results of data related to this question. Students were asked to check any of the subjects that were combined with their job site experience.
Ninety-one (91) control group students and 660 experimental group students responded to the item. There were 1,092 EBCE responses to course listings and 116 Cooperative Education responses. Math, Language Arts, and Career Education were the courses that most EBCE students selected. Social Science was fourth highest in rank followed by Science and "other." An examination of the actual items indicated that the courses listed in the category of "other" included typing, general business, health, reading, agriculture, and industrial arts. There were fewer than 20 responses in those categories and they were combined into that sixth section. The results are shown in Table 12.

Table 12. Academic subjects: enrollment totals for Experience Based Career Education students and Cooperative Education students

<table>
<thead>
<tr>
<th>Subject</th>
<th>EBCE Number</th>
<th>% of Responses</th>
<th>Cooperative Education Number</th>
<th>% of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>260</td>
<td>39.4</td>
<td>30</td>
<td>33.0</td>
</tr>
<tr>
<td>L. Arts</td>
<td>224</td>
<td>33.9</td>
<td>8</td>
<td>8.8</td>
</tr>
<tr>
<td>Science</td>
<td>129</td>
<td>19.5</td>
<td>15</td>
<td>16.5</td>
</tr>
<tr>
<td>Soc Sci</td>
<td>159</td>
<td>24.1</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>Career Ed</td>
<td>224</td>
<td>33.9</td>
<td>49</td>
<td>53.8</td>
</tr>
<tr>
<td>Other</td>
<td>96</td>
<td>14.5</td>
<td>9</td>
<td>9.9</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>1,092</strong></td>
<td><strong>116</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The major subject differences were found in the areas of Language Arts and Social Science. Considerably more EBCE students were enrolled in experiential English and Social Science than were the Co-op students.*
Upon examination of the Cooperative Education student responses, it is revealed that more of the students in this control group were enrolled in Career Education than any of the other courses. Nearly 54% (53.8%) of the control group enrolled in Career Education. Thirty-three percent of the control group enrolled in related mathematics. Sixteen and one-half percent enrolled in Science. Lower in ranking were "other," Language Arts, and Social Science.

The major difference to note is that more EBCE students were enrolled in a related course than were Control Group students. Six hundred and sixty EBCE students responded for a total of 1,092 entries. This averages out to 1.65 selections per EBCE student. Ninety-one Cooperative Education students responded to this item with a total of 116 entries. This averages out to 1.27 selections for each Co-op student.

5. How many EBCE students and how many Cooperative Education students were with a Coordinator who worked with them on a one-to-one basis for job exploration?

6. How many EBCE students and how many Cooperative Students were with a Coordinator who worked with them on a private basis for job exploration and related academics?

7. How many EBCE students and how many Cooperative Education students were in programs offered by two different teachers?

These three descriptive questions were answered by the 35th question of the student survey. Students were asked to check the one category that was most like their experience. Value 1 indicated one-on-one assistance by a single teacher for job exploration. Value 2 indicated that
assistance was given by one teacher for job site exploration and the related academic course(s). Value 3 listed the number of students who had two different teachers coordinating the job sites and related academics. The results for the control group are listed in Table 13. The experimental group totals are in Table 14.

In direct response to question 5, 72.0% of the Cooperative Education students were assigned to a single teacher for one-on-one job site supervision as opposed to 28.1% of the EBCE students.

In response to question 6, the EBCE students ranked much higher than the Cooperative Education students. Thirty-eight and four-tenths percent of the EBCE students were assigned to a teacher on a one-to-one basis for job site exploration and academic coursework. Similarly, 12.9% of the Cooperative Education students were working with the same teacher for job site exploration and academic coursework.

Question 7 sought to determine how many of the student surveyed worked with two different teachers on the job site exploration and the academic coursework. Data revealed that 10.8% of the Co-op students worked with two different teachers, while 30.3% of the EBCE students worked with two different teachers.

8. What is the relationship between student satisfaction with the program and the intensity of assistance from the teacher as measured by the amount of time spent with the Coordinator?

The first step in the analysis of any possible relationship between student satisfaction with the program and the type and amount of supervision was to calculate student degree of satisfaction. Seven items
Table 13. Control group student responses to program supervision

<table>
<thead>
<tr>
<th>Type of Supervision</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on-one for job site supervision</td>
<td>67</td>
<td>72.0</td>
<td>75.3</td>
<td>75.3</td>
</tr>
<tr>
<td>One-on-one for job site and academic</td>
<td>12</td>
<td>12.9</td>
<td>13.5</td>
<td>88.8</td>
</tr>
<tr>
<td>supervision</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two separate teachers for job and academic</td>
<td>10</td>
<td>10.8</td>
<td>11.2</td>
<td>100.0</td>
</tr>
<tr>
<td>No response</td>
<td>4</td>
<td>4.3</td>
<td>Missing</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>93</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

Table 14. Experimental group student responses to program supervision

<table>
<thead>
<tr>
<th>Type of Supervision</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-on-one for job site supervision</td>
<td>187</td>
<td>28.1</td>
<td>29.0</td>
<td>29.0</td>
</tr>
<tr>
<td>One-on-one for job site and academic</td>
<td>256</td>
<td>38.4</td>
<td>39.7</td>
<td>68.7</td>
</tr>
<tr>
<td>supervision</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two separate teachers for job and academic</td>
<td>202</td>
<td>30.3</td>
<td>31.3</td>
<td>100.0</td>
</tr>
<tr>
<td>No response</td>
<td>21</td>
<td>3.2</td>
<td>Missing</td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>666</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>
on the questionnaire were indicators of positive or negative feelings about the EBCE or Cooperative Education programs:

Item 1: If you had to do it over again, would you decide to participate in EBCE? (Co-op)

Item 2: As a result of EBCE (Co-op) did you make an occupational or career choice?

Item 3: As a result of EBCE (Co-op) did your attitude toward work change?

Item 4: As a result of EBCE (Co-op) did your attitude toward education change?

Item 5: Do you think EBCE (Co-op) should include periodic meetings to discuss student experiences?

Item 6: Did EBCE (Co-op) help to find employment in the occupation or career of your choice?

Item 7: How would you rate the overall quality of your EBCE (Co-op) program?

In responding to these seven items, students used one of five possible answers: definitely yes, yes, maybe, no, definitely not. Since Experience Based Career Education and Cooperative Education programs do include periodic meetings to discuss student progress, it was determined that a positive response to this item was an indication of satisfaction with the program. Table 15 displays the mean scores for students that represent their degree of perception about program satisfaction. The highest possible score on all seven items would be 35. Pearson Correlation Coefficients were calculated for each part of question 8. First,
Table 15. Student perception of program satisfaction

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean Score (Possible Score = 35)</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative Education</td>
<td>25.92</td>
<td>4.39</td>
<td>.45</td>
</tr>
<tr>
<td>EBCE</td>
<td>28.42</td>
<td>3.89</td>
<td>.15</td>
</tr>
</tbody>
</table>

The control group degree of program satisfaction was compared with the control group rating of program supervision. (Program supervision was measured by item 35 on the survey that asked the student to list the manner in which the Coordinator assisted with the program.) Then, the control group's degree of satisfaction was compared with the rating on frequency of supervision given. (Program frequency was measured by item 36 which allowed the students to indicate the amount of clock hours spent each week with the Coordinator.) Results of the Pearson Correlation analysis for the control group are shown in Table 16.

Table 16. Relationship between control group satisfaction with program type and amount of teacher supervision

<table>
<thead>
<tr>
<th>Supervision Frequency</th>
<th>Pearson Correlation Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Satisfaction</td>
<td>$r = - .1196$</td>
</tr>
<tr>
<td></td>
<td>$n = (89)$</td>
</tr>
<tr>
<td></td>
<td>$P = .264$</td>
</tr>
<tr>
<td>Frequency</td>
<td>$r = .1494$</td>
</tr>
<tr>
<td></td>
<td>$n = (37)$</td>
</tr>
<tr>
<td></td>
<td>$P = .377$</td>
</tr>
</tbody>
</table>
The correlation between the control group satisfaction with program and the type of supervision provided by the teacher was -.12. Little, if any relationship exists between satisfaction with the program and supervision as measured by item 35 of the survey.

The correlation between control group satisfaction with program and the amount of supervision given by the teacher was .15. This is very low positive relationship. No real conclusions can be drawn from a lack of a significant relationship existing between satisfaction with the program and the frequency of teacher assistance as measured by item 36 on the questionnaire.

Table 17. Relationship between experimental group satisfaction with program and type and amount of teacher supervision

<table>
<thead>
<tr>
<th></th>
<th>Pearson Correlation Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supervision</td>
</tr>
<tr>
<td>Program Satisfaction</td>
<td>$r = -0.0230$</td>
</tr>
<tr>
<td></td>
<td>$n = (645)$</td>
</tr>
<tr>
<td></td>
<td>$P = 0.560$</td>
</tr>
</tbody>
</table>

The correlation between the experimental group satisfaction with program and the type of supervision is -.02. This is an indication that very limited relationship exists between satisfaction in program and the type of supervision given. As reported in an earlier analysis (Table 14), 28.1 percent of EBCE students had one-on-one supervision for the job site component and 38.4% of the students had one-on-one supervision for job site placement and academic work in the Cooperative Education.
programs.

The correlation between the experimental group satisfaction with program and the amount of supervision as measured by item 36 on the survey is .0482. This is a value that indicates a very small correlation between satisfaction with program and type of supervision as measured by item 36.

9. What is the difference between the satisfaction shown on the part of the EBCE students and the satisfaction shown by those who were in the Cooperative Education Program?

In order to measure this dimension of the research project, items were identified as indicators of program satisfaction (Graduate Survey, Appendix C). Student response for each of the seven items was totaled and means were calculated for the control and experimental groups. An independent nondirectional T-test was then computed to examine the difference between the EBCE and Cooperative Education students. The results are shown in Table 18. A significant difference was found between the overall satisfaction with program for the control group and the experimental group. The Experience Based Career Education students were significantly more satisfied with their programs than were the control group students. Therefore, the researcher can reject the null hypothesis and accept the alternative hypothesis and conclude that a significant difference exists at the .001 level of confidence. The mean score for EBCE students was 28.42 compared to a mean score of 25.92 for the Co-op students. The highest possible score for any student for the individual rating of perception of program satisfaction would be 35.
Table 18. Difference between Experimental Group and Control Group on overall satisfaction with program

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Cases</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>93</td>
<td>25.92</td>
<td>4.387</td>
<td>.455</td>
</tr>
<tr>
<td>Experimental</td>
<td>666</td>
<td>28.42</td>
<td>3.894</td>
<td>.151</td>
</tr>
</tbody>
</table>

T-Test

<table>
<thead>
<tr>
<th></th>
<th>Pooled Variance Estimate</th>
<th>Separate Variance Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Value</td>
<td>1.27</td>
<td>1.27</td>
</tr>
<tr>
<td>2-Tail Prob.</td>
<td>0.110</td>
<td>0.110</td>
</tr>
<tr>
<td>T Value</td>
<td>-5.69&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-5.20</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>757</td>
<td>113.17</td>
</tr>
<tr>
<td>2-Tail Prob.</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

<sup>a</sup>Significant at .001 level.

10. How many of the EBCE students and how many Cooperative Education students indicated that as a result of the program, their attitude toward work and/or school changed?

Items three and four on the Graduate Survey asked students their attitudes toward work or school. Students were able to respond using the five item scale with the scale value of 5 indicating the highest degree of agreement and 1 indicating that the program definitely did not affect their attitudes.
Table 19. Student rating of attitude change toward work

<table>
<thead>
<tr>
<th>Value</th>
<th>EBCE Frequency</th>
<th>Co-op Frequency</th>
<th>EBCE Percent</th>
<th>Co-op Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td></td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>58</td>
<td>17</td>
<td>8.7</td>
<td>18.5</td>
</tr>
<tr>
<td>3</td>
<td>76</td>
<td>22</td>
<td>11.4</td>
<td>23.9</td>
</tr>
<tr>
<td>4</td>
<td>347</td>
<td>40</td>
<td>52.1</td>
<td>43.5</td>
</tr>
<tr>
<td>5</td>
<td>177</td>
<td>13</td>
<td>26.6</td>
<td>14.1</td>
</tr>
<tr>
<td>9 (no response)</td>
<td>1</td>
<td>1</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The mean for the Co-op group of students was 3.53. The mean score for the EBCE group was 3.95. The response of a 4 "yes" or 5 "definitely yes" on the Graduate Survey indicates that a student had a positive response to attitude change. When considering the number of students who responded with a 4 or 5, there were 78.7% in the EBCE group and 54.6% in the Co-op program.

A T-Test was employed to examine the significance of the difference between the EBCE students and Co-op students perception of attitude change toward work because of their programs. The populations from which the EBCE and Co-op samples were taken were homogeneous with respect to the dependent variable. The analysis of attitude change toward work by control group and experimental group is shown in Table 20.

There was a significant difference between the EBCE student's perception of attitude change toward work and the Co-op student's perception
Table 20. Analysis of attitude change toward work by EBCE and Co-op students

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op</td>
<td>92</td>
<td>3.53</td>
<td>.95</td>
<td>-4.07</td>
<td>0.000a</td>
</tr>
<tr>
<td>EBCE</td>
<td>665</td>
<td>3.95</td>
<td>.91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at .01 level.

of attitude change toward work. The EBCE students perceived their program to be a greater influence on their attitudes toward work than did the students in Cooperative Education. The null hypothesis that there was no significant difference between EBCE students' perception of attitude toward work change was rejected ($t = -4.07, p < .01$). The mean score for EBCE students was significantly higher than the mean score of the Co-op students.

Table 21. Student rating of attitude change toward education

<table>
<thead>
<tr>
<th>Value</th>
<th>EBCE Frequency</th>
<th>Co-op Frequency</th>
<th>EBCE Percent</th>
<th>Co-op Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td></td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>70</td>
<td>29</td>
<td>10.5</td>
<td>31.2</td>
</tr>
<tr>
<td>3</td>
<td>129</td>
<td>24</td>
<td>19.4</td>
<td>25.8</td>
</tr>
<tr>
<td>4</td>
<td>256</td>
<td>30</td>
<td>38.4</td>
<td>32.3</td>
</tr>
<tr>
<td>5</td>
<td>204</td>
<td>10</td>
<td>30.6</td>
<td>10.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>666</td>
<td>93</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The mean for the Co-op group of students was 3.23. The mean score for the EBCE group was 3.87. When considering the number of students who responded with a "4" or "5" on the Graduate Survey to indicate positive attitude change, there were 69.0% in the EBCE group and 43.1% in the Co-op group.

A T-Test was employed to examine the significance of this difference between EBCE students' attitudes toward education and Co-op students' attitudes toward education. The populations from which the EBCE and Co-op samples were taken were homogeneous with respect to the dependent variable. The analysis of student perception of attitude change toward education is shown in Table 22.

Table 22. Analysis of attitude change toward education by EBCE and Co-op students

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op</td>
<td>93</td>
<td>3.23</td>
<td>1.01</td>
<td>-5.82</td>
<td>0.000a</td>
</tr>
<tr>
<td>EBCE</td>
<td>665</td>
<td>3.87</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at .001 level.

On the basis of the T-Test results, one can reject the null hypothesis and accept the alternative hypothesis. It can be concluded that a significant difference does exist between EBCE students' perception of their attitudes toward education and Co-op students' perception of their attitudes toward education. The EBCE students perceived themselves
to have more positive attitudes toward education as a result of the program than did the students in Cooperative Education ($t = -5.82$, $p < .001$).

11. What percentage of students felt that the EBCE/Cooperative Education Program was a major factor in their finding employment in the career field of their choice?

Question 6 on the Graduate Survey asked students to indicate the extent to which they perceived the program to have been a major contributor to job placement within the chosen career field. Forty-three percent (43%) of the students from the control group responded with a "4" or "5" which weighted positiveness into the total group score. The mean score for the control group was 3.22. Fifty-five and one-tenth percent (55.1%) of the experimental group students responded with a "4" or "5". The mean score for the experimental group was 3.54.

12. If given the opportunity, what percentage of the Experience Based Career Education students and what percentage of the Cooperative Education students would participate again?

The results of item one from the Graduate Survey indicate a high degree of positive response for the students in the control group and the experimental group (Table 23).

From the information listed in Table 23, it can be concluded that 88.2% of the Co-op students would participate in the program again. Similarly, it can be stated that 94.5% of the EBCE students would enroll again in the program. The responses for category 4 "yes" and category 5 "definitely yes" were summed to present the cumulative percentage for
the positive responses.

Table 23. Program participation responses

<table>
<thead>
<tr>
<th>Value</th>
<th>EBCE Frequency</th>
<th>Co-op Frequency</th>
<th>EBCE Percent</th>
<th>Co-op Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td></td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td></td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>28</td>
<td>11</td>
<td>4.2</td>
<td>11.8</td>
</tr>
<tr>
<td>4</td>
<td>131</td>
<td>30</td>
<td>19.7</td>
<td>32.3</td>
</tr>
<tr>
<td>5</td>
<td>498</td>
<td>52</td>
<td>74.8</td>
<td>55.9</td>
</tr>
<tr>
<td>9 (no response)</td>
<td>1</td>
<td></td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>666</td>
<td>93</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Control Group Mean: 4.4
Experimental Group Mean: 4.67

Research Questions

Multiple regression analysis using the stepwise procedure in SPSS was used to test hypotheses 1, 2, 3, and 4. In cases where further information was warranted, T-Tests were conducted in order to describe the significance of the difference. All hypotheses were written in the null form and were tested at the .05 level of confidence. Statistics in the tables have been reported after rounding the numbers to two decimal places. Only in the case of the mathematical equation for Regression Analyses was the full configuration reported to the fifth decimal place. In instances where variance is reported, the rounding "error" may cause the variance to be slightly higher or lower.
Prior to using the regression procedure, some recoding of variables occurred. Throughout the Graduate Survey Instrument, high numbers were used to indicate positiveness or satisfaction. To maintain consistency throughout the statistical analysis, the responses to item 35 on the Survey were recoded so that the response with the highest numerical value indicated the most positive response a student could assign. Therefore, when examining the type of supervision given, response 1 was changed to a 3 to indicate the most intensive teacher assistance, and choice number 3 was coded with a 1 to indicate the least amount of teacher supervision.

In order to avoid responses that would be difficult to classify, the choices students made on item 37 (number of job sites explored) were recoded. The actual number of sites was coded for students who explored from one to nineteen job sites. Students who explored from 20 to 55 sites were placed into one category. Two students in Co-op programs explored more than 20 job sites and ten EBCE students were placed at job sites between 20 and 55 in number.

Item 37 of the Graduate Survey Instrument was recoded before the Regression Analysis was completed. Again, to keep the student responses consistent, the seven responses were recoded so that response 1 indicated the least amount of supervision and response 6 was the most amount of supervision at a job site. Choice number 7 remained the same, "other."
Testing of Hypotheses

Hypothesis 1 results

The hypothesis that a student's age, gender, community size, grade level, previous work experience and membership in the control group or the experimental group do not contribute to the prediction of a student's perception of personal-social skills was tested using the forward stepwise multiple regression procedure in SPSS. On the basis of this analysis, the hypothesis was rejected at the .01 level of significance \( F(3,719) = 19.81, p < .01 \).

The analysis revealed that the group (EBCE or Co-op) was the best predictor of student's positive perception of personal-social skill development accounting for 6% of the variation. Student's gender also contributed to the prediction accounting for an additional 1%. The third contributor to the prediction equation was previous paid work experience which added another 0.5%. After group, gender and previous work experience had been considered, none of the remaining variables made a significant contribution. The best prediction equation as indicated in Table 23 was:

\[
PSS = 0.44465 \text{ Group} - 0.15134 \text{ sex} + 0.10711 \text{ previous work} + 3.82894.
\]

In order to examine further the contribution of the three predictor variables, an additional analysis was conducted using the T-Test. The first T-Test was employed to determine which of the two groups, EBCE or Co-op was the group that had the higher scores on Personal Social Skill Development. The analysis of student perception of Personal-Social Skill Development is shown in Table 25.
Table 24. Regression analysis of personal social skill development considering student variables

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Regression Coefficients&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>.24</td>
<td>.06</td>
<td>.24&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Gender</td>
<td>.27</td>
<td>.07</td>
<td>-.12&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Previous Paid Work Experience</td>
<td>.28</td>
<td>.08</td>
<td>.07&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>F-Value</td>
<td>19.81&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>3, 719</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Standardized regression coefficients from final equation.

<sup>b</sup>.01 level of significance.

<sup>c</sup>.05 level of significance.

Table 25. Analysis of student perception of personal-social skill development by experimental group and control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op</td>
<td>93</td>
<td>3.66</td>
<td>0.80</td>
<td>-6.37</td>
<td>0.000&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>EBCE</td>
<td>666</td>
<td>4.09</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Significant at .01 level.
On the basis of the T-Test results, evidence supported the rejection of the null hypothesis and the acceptance of the alternative hypothesis. It can be concluded that a significant difference does exist between EBCE students' perception of personal-social skill development and the Co-op students' perception of personal-social skill development. The EBCE students had significantly higher mean scores (4.09) on Personal-Social skill development than did the Co-op students (3.66) ($t = -6.37$, $p < .01$).

The second predictor variable was gender. A T-Test was employed to determine whether females or males had higher personal-social skill scores. The results appear in Table 26.

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>420</td>
<td>4.10</td>
<td>0.59</td>
<td>3.60</td>
<td>0.000(^a)</td>
</tr>
<tr>
<td>Male</td>
<td>337</td>
<td>3.94</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)Significant at .01 level.

On the basis of the T-Test results determining which sex had higher personal-social skill scores, the null hypothesis was rejected and the alternative was accepted. A difference did exist with female and male scores. It can be concluded that females had significantly higher scores
than did males on the personal-social skill development when considering the total group. The females had significantly higher mean scores (4.10) than did the males (3.94), \( t = 3.60, p < .01 \).

Even further T-Testing was employed to examine the male and female scores for the experimental and control groups. The results are presented in Tables 27 and 28.

Table 27. Control group scores on personal-social skill development by males and females

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>45</td>
<td>3.64</td>
<td>0.78</td>
<td>-0.16</td>
<td>0.871</td>
</tr>
<tr>
<td>Male</td>
<td>47</td>
<td>3.67</td>
<td>0.83</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

On the basis of the T-Test for differences between males and females in the control group on personal-social skill scores, the null hypothesis was retained. There was no significant difference between male and female scores \( t = -0.16, p > .871 \).

The final analysis of Hypothesis 1 involved a T-Test to determine if a significant difference existed between the male and female scores on personal-social skill development for the EBCE students in the experimental group. The results are presented in Table 27.

On the basis of the T-Test results on personal-social skill scores for male and female students in EBCE, the null hypothesis was rejected.
Table 28. Experimental group scores on personal-social skill development by males and females

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>375</td>
<td>4.16</td>
<td>0.53</td>
<td>3.92</td>
<td>0.000a</td>
</tr>
<tr>
<td>Male</td>
<td>290</td>
<td>3.99</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^Significant at .01 level.

It was concluded that a significant difference does exist between female EBCE students' perception of personal-social skill development and the male EBCE students' perception of personal-social skill development. The EBCE female students had significantly higher mean scores (4.16) than the males did (3.99). The scale used throughout the Graduate Survey Instrument was a five-point scale with the number 5 representing the most positive feeling about the program or issue and the numeral 1 representing the lowest possible rating.

Hypothesis 2 results

The hypothesis that a student's age, gender, community size, grade level, previous work experience and membership in the control group or the experimental group do not contribute to the prediction of a student's perception of world-of-work skills was tested using the forward stepwise multiple regression procedure in SPSSX. On the basis of this analysis, the hypothesis was rejected at the .01 level of significance \([F (2, 720) = 25.39, p < .01]\).
The analysis revealed that the group (EBCE or Co-op) was the best predictor of a student's positive perception of world-of-work skill development accounting for 6% of the variance. Student's previous work experience as a volunteer in the community, church, or other community organization also contributed to the prediction accounting for an additional 1% of the variance. After the variables of group and previous work experience had been considered, none of the remaining variables made a significant contribution. The best prediction equation as indicated in Table 29 was:

\[ \text{WOW} = 0.46819 \times \text{group} + 0.16306 \times \text{previous work} + 3.55658. \]

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Regression Coefficients^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>0.24</td>
<td>0.06</td>
<td>0.23^b</td>
</tr>
<tr>
<td>Previous Work Experience</td>
<td>0.26</td>
<td>0.07</td>
<td>0.10^b</td>
</tr>
</tbody>
</table>

^aStandardized regression coefficients from final equation.

^b.01 level of significance.

In order to examine the contribution of the predictor variable group, additional analysis was conducted using the T-Test. The test
was conducted in order to determine which of the two groups, EBCE or Co-op, was the group that had the highest scores on world-of-work skills. The analysis of student perception of world-of-work skill development is shown in Table 30.

Table 30. Analysis of student perception of world-of-work skill development by experimental and control group

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Mean</th>
<th>S.D.</th>
<th>T-Value</th>
<th>2-Tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op</td>
<td>93</td>
<td>3.60</td>
<td>0.83</td>
<td>-6.42</td>
<td>0.000a</td>
</tr>
<tr>
<td>EBCE</td>
<td>666</td>
<td>4.06</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at .001 level.

On the basis of the T-Test results, evidence supported the rejection of the null hypothesis and the acceptance of the alternative hypothesis. It was concluded that a significant difference does exist between EBCE students' perception of world-of-work skill development and Co-op students' perception of world-of-work skill development. The EBCE students had significantly higher mean scores (4.06) on world-of-work skill development than the Co-op students (3.60) (t = -6.42, p < .01).

Hypothesis 3 and 4 of the study examined the contribution that various program variables made to the students' development of personal skills and world-of-work skills. Before these two hypotheses could be analyzed, program model and type of supervision given were coded as dummy
variables. For program model, the following codes were provided:

\[
\begin{align*}
\text{compute MOD 1} &= 0, \\
\text{compute MOD 2} &= 0, \\
\text{compute MOD 3} &= 0, \\
\text{compute MOD 4} &= 0, \\
\text{compute MOD 5} &= 0. \\
\end{align*}
\]

If Model = 1 MOD 1 = 1 (Model 1 was Appalachia Educational Laboratory)
If Model = 2 MOD 2 = 1 (Model 2 was Farwest Laboratory)
If Model = 3 MOD 3 = 1 (Model 3 was Northwest Laboratory)
If Model = 4 MOD 4 = 1 (Model 4 was Research for Better Schools Laboratory)
If Model = 5 MOD 5 = 1 (Model 5 was Executive Internship Program)

When recoding using dummy variables for type of program supervision, the following codes were provided:

\[
\begin{align*}
\text{Compute SUP1} &= 0, \\
\text{Compute SUP2} &= 0, \\
\text{Compute SUP3} &= 0. \\
\end{align*}
\]

If Super = 1 SUP 1 = 1 (Super 1 was service split between two teachers)
If Super = 2 SUP 2 = 1 (Super 2 was service by one teacher for academic and career classes)
If Super = 3 SUP 3 = 1 (Super 3 was service by one teacher for one-on-one basis)

Hypotheses 3 and 4 were analyzed using just the information from the 666 students in the experimental group. In these two final research questions, the unique program variables of EBCE were examined in terms of their possible contribution to the student's perception of personal-social skill development and/or world-of-work skill development.

Hypothesis 3 results

The hypothesis that the Model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at site each week and the use of related curriculum do not
contribute to the prediction of a student's perception of personal-social skills was tested using the forward stepwise multiple regression procedure in SPSSx. On the basis of this analysis, the hypothesis was rejected at the .01 level of significance \[ F(2, 563) = 11.86, p < .01 \].

The analysis revealed that time was the best predictor of a student's positive perception of personal-social skill development accounting for 3% of the variation. Student's enrollment in Career Exploration without related academics also contributed to the prediction accounting for an additional 1% of the variance. After time (number of semesters in program) and enrollment in Career Exploration without related academics had been considered, none of the remaining variables made a significant contribution. The best prediction equation as indicated in Table 31 was:

\[ PSS = .08307 \times \text{time} - .13718 \times \text{subject choice} + 3.98652. \]

The Regression Analysis of Hypothesis 3 indicates that as the amount of time that students spent in the EBCE program increased, so did their respective score on personal skill development. A positive correlation exists between the number of semester in the program and personal-social skill development. The minimum number of semesters reported by a student was one and the maximum number of semesters was eight.

Further examination of the results of hypothesis 3 indicated that a significant negative correlation exists between students selecting Career Exploration without related academics and their score on personal-social skill development. Students who enrolled in EBCE and took the related EBCE courses of Math, Social Science, Science and Language Arts
Table 31. Regression analysis of personal-social skill development considering program variables in experimental group

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Regression Coefficients^a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of semesters in program</td>
<td>.17</td>
<td>.03</td>
<td>.13^b</td>
</tr>
<tr>
<td>Enrollment in career education without related academics</td>
<td>.20</td>
<td>.04</td>
<td>-.12^b</td>
</tr>
<tr>
<td>F-Value</td>
<td>11.86^b</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>2, 563</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

^ Standardized regression coefficients from final equation.

^b .01 level of significance.

had higher scores than did students who enrolled in Career Education only.

Hypothesis 4 results

The hypothesis that the Model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at site each week and the use of related curriculum do not contribute to the prediction of a student's perception of world-of-work skills was tested using the forward stepwise multiple regression procedure in SPSSx. On the basis of this analysis, the hypothesis was rejected at the .01 level of significance \( F \(4, 561) = 9.58, p < .01\).
The analysis revealed that Model 1 of EBCE, the Appalachia Educational Laboratory Model was the best predictor of a student's positive perception of world-of-work skills accounting for 3% of the variance. The next best predictor of world-of-work score was the amount of time spent in the project. The variable time contributed an additional 2% of the variance. The third best predictor was enrollment in Model III of EBCE, the Northwest Regional Laboratory Model of the program. Model III contributed an additional 1% of the variance. The fourth contributor to the prediction included student enrollment in Science on an experimental basis. Science added a final one-half percent to the variance. After Model 1, time in program, and Model 3, enrollment in science, had been considered, none of the remaining variables made a significant contribution. The best prediction equation as indicated in Table 32 was:

\[
\text{WOW} = 0.30467 \text{ model 1} + 0.07318 \text{ time} + 0.16708 \text{ model 3} + 0.14887 \text{ subject 3} + 3.71403.
\]

The Regression Analysis of Hypothesis 4 indicates that there is a positive relationship between Models 1 and 3 of EBCE and the student's perception of world-of-work skill attainment. In addition, a positive, significant relationship existed between the amount of time spent in EBCE and the student perception of world-of-work skill attainment. The more semesters a student was enrolled, the higher the world-of-work score was reported. The final indication from the testing of Hypothesis 4 was that the students who were enrolled in EBCE Science tended to have higher scores on the world-of-work ratings than did the other students who were not enrolled in science.
Table 32. Regression analysis of world-of-work skill development considering program variables in experimental group

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>Multiple R</th>
<th>R Square</th>
<th>Regression Coefficients&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appalachia Educational Laboratory Model</td>
<td>.17</td>
<td>.03</td>
<td>.24&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Number of semesters in program</td>
<td>.22</td>
<td>.05</td>
<td>.11&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Northwest Regional Laboratory Model</td>
<td>.24</td>
<td>.06</td>
<td>.12&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Enrollment in related science course</td>
<td>.25</td>
<td>.06</td>
<td>.09&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>F-Value</td>
<td>9.58171&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DF</td>
<td>4, 561</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Standardized regression coefficients from final equation.

<sup>b</sup>.01 level of significance.

<sup>c</sup>.05 level of significance.
CHAPTER V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study was designed to examine the impact of Experience Based Career Education upon the career development of high school graduates across the nation. Career development was the term used for the composite outcome of personal-social skill development and the acquisition of world-of-work skills. A series of student variables such as age, gender, community where enrolled, grade level and previous work experience were examined for 666 EBCE students and 93 control group cooperative education students. Program variables unique to EBCE were examined for the 666 experimental group students. Program variables included Model of EBCE (as established by the major research laboratories of the National Institute of Education), type of instructional support, length of time in program, number of job sites explored, amount of time at each job site each week and use of related instruction.

The previous chapters included:

1. an introduction outlining the problem of the study, the descriptive questions, the research hypotheses, methodology, and the analysis techniques employed.

2. a review of the literature pertaining to the theories of career choice, the foundations of the career education movement, and the background development of Experience Based Career Education.
3. the methodology used in conducting this research, the procedures followed, and the analysis of the data.

4. the findings as explained in narration and in tables.

The primary purposes of this chapter are to summarize the findings of this research study and draw basic conclusions implied by the findings. Finally, several recommendations are presented based on the implications and conclusions of this research study.

Restatement of the problem

The overall problem of this study was to investigate the impact of Experience Based Career Education programs upon the Career Development of secondary students in the nation.

Career Development as hereby researched is a multi-faceted dimension of the total learning process. As one of those facets, Experience Based Career Education projects dealt with personal-social skill development and the attainment of world-of-work employability skills. From those two categories, the following sub-problems emerged:

1. Did Experience Based Career Education programs increase the personal-social skills of the students?
2. To what extent did Experience Based Career Education programs help students to develop world-of-work (job seeking and job keeping) skills?

Restatement of the purpose

The main purpose of this study was to obtain information that would be useful in:
1. assisting teachers in general education and special education in determining the effect of EBCE upon personal-social skill development and the acquisition of world-of-work employability skills.

2. providing assessment information needed to determine the most useful components of EBCE programs.

3. defining ways that EBCE programs can impact and be of additional assistance to other EBCE students in general education and special education.

4. assisting vocational educators in identifying the value of exploratory career education.

5. describing the trends followed by EBCE graduates after program completion.

Conclusions

This section presents a summary and the conclusions of the study as they pertain to the research hypotheses and those descriptive research questions that yielded the most helpful information. Each hypothesis is restated and followed by a conclusion based on the findings of Chapter Four. A discussion of the implications drawn from the related hypotheses is included where appropriate.

Research Hypothesis One

It was hypothesized that the contribution of student variables (age, gender, community size, grade level, and previous work experience) to the development of personal-social skills as measured by the standardized
regression coefficients does not differ from zero beyond that expected by chance at the 95% confidence level.

Discussion

It was concluded that, based upon data reported in Table 24, the independent variables of group, gender, and previous work experience contributed significantly to the student's perception of a positive development of personal-social skills. Of the two groups, the experimental group (EBCE) students had significantly higher mean scores than did the control group (Co-op) regarding personal-social skills. The T-Test that was conducted after the Regression Analysis produced results that were significant at the .01 level of confidence.

The second predictor variable for Hypothesis One was the gender of the student in the control and the experimental groups. When examining the contribution of the variable of sex to the overall regression equation, the females had significantly higher scores than did the males on personal-social skill development. When considered separately as experimental and control groups, the result shifted. There was no significant difference between male and female scores within the control group or the Co-op students group. There was a significant difference found in the EBCE group. This difference was in the female scores which were significantly higher than the male scores regarding their perception of personal-social skill development.

The third predictor variable in the regression equation for Hypothesis One included previous work experience. Upon examination of the
Graduate Survey items of the choices reported in that category, it was determined that the variable coded "Pre-5" which represented work at a full-time job, during the summer on a paid basis, contributed to the development of a positive perception of personal-social skill in a statistically significant way.

Research Hypothesis Two

It was hypothesized that the contribution of student variables (age, gender, community size, grade level, and previous work experience) to the development of world-of-work skills as measured by the standardized regression coefficients does not differ from zero beyond that expected by chance at the 95% confidence level.

Discussion

It was concluded that, based upon the data reported in Table 29, the independent variables of group and previous work experience contributed significantly to the student's perception of a positive development of world-of-work skills. Of the two groups, the experimental EBCE group again had significantly higher mean scores than did the control Co-op group. The T-Test that was conducted after the Regression Analysis showed results that were significant at the .01 level of confidence.

Upon further examination of the second predictor variable, previous work experience, and its relationship to Hypothesis Two, it was revealed that the variable coded "pre-2", which refers to work on a volunteer basis for the community, church or other needy organization was also statistically significant.
Research Hypothesis Three

It was hypothesized that the contribution of program variables within EBCE (Model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at each job site each week and the use of related curriculum) to the development of personal-social skills as measured by the standardized regression coefficients does not differ from zero beyond that expected by chance at the 95% confidence level.

Discussion

It was concluded that, based upon data reported in Table 31, the independent variables of length of time in program and enrollment in the related instruction of career exploration without related academics contributed significantly to the student's perception of a positive development of personal-social skill. Students across the nation were enrolled in EBCE from one to eight semesters throughout four years of high school. The highest mean scores for personal-social skill development came from the students who were enrolled more than one semester.

The relationship between enrollment in career exploration without related academics was a negative one that was found to be significant. Students who were not enrolled in EBCE English, math, or social science but who were enrolled only in career exploration included in the orientation week of the EBCE program had lower personal-social skill development scores. For some students, the career exploration was just that isolated week in terms of formal coursework.
Research Hypothesis Four

It was hypothesized that the contribution of program variables within EBCE (Model of EBCE, type of instructional support, length of time in program, number of sites explored, amount of time at job site each week, and the use of related instruction) to the development of world-of-work skills as measured by the standardized regression coefficients does not differ from zero beyond that expected by chance at the 95% confidence level.

Discussion

It was concluded that, based upon data reported in Table 32, the independent variables of program model, number of semesters in program, and enrollment in related coursework contributed significantly to the student's perception of the acquisition of world-of-work employability skills. The Appalachia Educational Laboratory program model was the one that indicated the greatest contribution to employability skill development as was reflected by the regression equation. The next variable that contributed significantly to the acquisition of world-of-work skill was the number of semester a student was enrolled in the program. The students could enroll from one to four semesters during the four years of a traditional high school. The students with two or more semesters had the highest mean scores. The more time a student spent enrolled in EBCE, the greater the development of employability skill to enter the world-of-work was evidenced.

The third predictor variable to Hypothesis Four was enrollment in
the programs sponsored by Model III as implemented by the Northwest Re-
gional Model. The fourth and final predictor was enrollment in the re-
lated course of Science.

In addition to the four major research hypotheses, the Nation-wide
Follow-up Study of EBCE graduates examined twelve research questions.
The conclusions from the most significant findings are presented herein.

Research Question Two

The second research question asked what percentage of students in
the experimental and control group are presently employed. In Figure 4,
the EBCE students and Co-op students are compared in the following occu-
pational choices:

- enrollment at a 2-year college
- enrollment at a 4-year college
- Enrollment at a Vocational-Technical College or Institute
- Part-time employment
- Full-time employment
- Unemployment
- Enlistment in the military
- Homemaking

The greatest difference between the EBCE and Co-op students was
in the area of unemployment. The results indicated that at the time
of the survey, 3.9% of the EBCE students were unemployed and 21.5% of
the Co-op students were unemployed. When using a T-Test to explore the
nature of the difference, it was found to be significant beyond the .01
level of confidence.

Research Question Three

The third research question determined what percentage of students in EBCE and Cooperative Education are presently employed in an area they explored through the respective programs. The EBCE and Co-op student responses were similar and quite positive. Forty-three Co-op students (46.2%) indicated that their present status was related to their job site placement in high school. Similarly, 340 EBCE students (51.1%) indicated that their present work was directly related to job site exploration through the program.

Research Question Eight

What is the relationship between student satisfaction with the program and the intensity of assistance from the teacher coordinator as measured by the amount of time spent with the coordinator. To analyze the answer to this question, a student "satisfaction" score was computed for the experimental and control groups. The score represented the student's response to seven items on the Graduate Survey Instrument that allowed individuals to register positive or negative "feelings" about program effectiveness.

The results indicated that EBCE and Co-op students had high mean scores for the combined seven items. The mean score of EBCE students was 28.42 and for Co-op students it was 25.92. The highest possible score was 35.0. Students felt very positive about both programs but did not feel that the intensity of assistance from the teacher/
coordinator was the reason for program success. A Pearson Correlation procedure was used to compare program satisfaction with the type and amount of teacher supervision (see Tables 16 and 17). The results indicate that little, if any, correlation existed between satisfaction with program and teacher supervision as reported by participants in the experimental and control groups.

Research Question Nine

The ninth research descriptive question sought to test the difference between EBCE and Co-op students perceptions of program satisfaction. As indicated in Table 18, the mean score for EBCE students on 'overall program satisfaction,' was 28.42 compared to 25.92 for the Co-op students. A T-Test was employed to determine the significance of the difference. The EBCE students were significantly more satisfied with their programs than were control group students.

Research Question Twelve

The final question posed in the nation-wide follow-up of students in EBCE asked what percentage of the students would, if given the opportunity, enroll again in the program. Students responded to the question on the Graduate Survey by selecting a number from one to five. A rating of 5 meant that a student would definitely participate again in the program. When combining the responses given "4's" and "5's" it can be concluded that a great percentage of the EBCE students and the Co-op students would participate again. The percentage of EBCE students who would select the program again was 94.5. Similarly, 88.2% of the Co-op
students indicated a very strong willingness to participate.

Author's Commentary

Implications made from the results of this study should be made cautiously with respect to predicting program outcome from the student and program variables used in the regression analyses. Although the independent student variables of gender, group, and previous paid work experience contributed significantly to the positive development of personal-social skills, they accounted for only 8% of the variance. Similarly, in examining Hypothesis Two, it was concluded that membership in EBCE and previous work experience on a volunteer basis contributed significantly to the acquisition of world-of-work skills. While these findings were statistically significant, they may not be practical predictors since together they accounted for just 7% of the variance.

The regression analysis of Hypothesis Three revealed that the number of semesters in program and enrollment in career education without related academics significantly contributed to the development of personal-social skills. Again the caution must be made for program adaptations due to the small amount of variance (.04) that was accounted for by these predictors.

Program model, number of semesters in program and enrollment in EBCE science significantly contributed to the student perception of acquisition of world-of-work skill. The predictors combined accounted for 6.4% of the variance and should be used cautiously when making program predictions.
The Nation-wide Follow-up Study of Experience Based Career Education relied heavily upon program coordinators who were actively employed in the programs. It should be noted that the remaining programs in many instances were the stronger ones and the ones that already experienced state, local and national short term evaluations. The volunteer nature of the sample must be taken into account when the highly positive results are reviewed.

A final limitation would seem to be the drawing of the EBCE sample from the entire nation and the Co-operative Education sample from just the State of Iowa. Time and resources of this private research effort did not permit a more comprehensive selection of control group.

Recommendations for Further Research

The following recommendations for further research are made to strengthen and expand the data collected in this study:

1. State and federal agencies should consider a nation-wide project to examine program cost and relate cost to benefit for Experience Based Career Education and Cooperative Education.

2. A study is recommended which investigates in greater detail the experiential nature of Experience Based Career Education. In this research, Language Arts and Social Science classes were those selected most often by students to be enrolled in for credit at the job site. Science was listed as a significant contributor to world-of-work skill acquisition. Further work is needed to examine the unique dimension of experiential learning and the reasons why these
three courses were frequently selected by students.

3. Unemployment rates for EBCE students differed significantly from that of the Co-op students group. Further research is needed to investigate why the Co-op group had such a high rate of unemployment for the State of Iowa.

4. A similar follow-up study is needed to compare program characteristics and student outcomes with students in Special Education, particularly the Learning Disabled, to those in General Education. Many states have expanded their EBCE programs to fit Special Education Individualized Education Plans. Work is needed to determine whether or not the world-of-work and EBCE job site exposure is as available to Special Education students as it is to students in General Education.

5. Since this study was started over two full years ago, further work is needed to determine current funding patterns and the availability of EBCE training for future program coordinators.

Conclusions

The Nation-wide Follow-up Study of Experience Based Career Education graduates reveals a program that students perceive to be directly responsible for a positive development of personal-social skills and world-of-work skills. All four major research hypotheses were rejected in the null form and the alternative hypotheses were accepted at the .01 level of confidence. When comparing EBCE students in the experimental group to Co-op students in the Control group, on most measures the mean
scores for EBCE students were significantly higher than the scores of the students in Cooperative Education.

Students who were enrolled in Experience Based Career Education believed that the program helped them greatly in developing self-awareness, self-confidence, responsibility for their own actions, skill in communicating with adults and superiors, accepting of valid criticism and identification of personal goals. Students in EBCE expressed ability to develop tolerance toward ideas and values of others, acquire new knowledge and transfer it to new situations. While in the program, as a part of the coursework and job exploration, EBCE students were taught how to clearly organize and express thoughts.

As a result of participation in EBCE, many students gained job-seeking and job-keeping skills that were referred to as world-of-work skills throughout the research report. They expressed ability in learning how to accept responsibility on the job, problem-solve, prepare for the world of work, and find and keep a job. Students in Experience Based Career Education learned how to complete the necessary "forms" that go with job application as well as learning about a variety of occupations. Many students indicated that EBCE helped them to determine what they did not want to do as well as what they did want to do in the world-of-work on a paid basis.

As indicated in the review of literature and State Department's summaries, the early summative and formative evaluation data collected across the nation indicated that Experience Based Career Education was a successful endeavor. This Nation-wide Survey of Graduates presents
the positive impact report that reflects program success after five full years of examination.
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Seyforth, J. T., Sanders, J. H., & Bertram, C. L. *Parent attitudes toward the program as indicated by an analysis of interview data.* EBCE technical report no. 43. Charleston, West Virginia: Appalachian Educational Laboratory, 1973a.
Seyforth, J. T., Sanders, J. H., & Bertram C. L. Student attitudes toward the program as indicated by an analysis of interview data. EBCE technical report no. 42. Charleston, West Virginia: Appalachian Educational Laboratory, 1973b.


ACKNOWLEDGMENTS

Educational research and doctoral degree work is a lifetime achievement; a special collection of efforts and activities. Upon the completion of a six-year effort I wish to gratefully acknowledge those individuals whose assistance and encouragement made the pursuit pleasurable.

Dr. William Wolansky worked from the Colleges of Industrial Education and International Education to chair my committee and steer my research and career. He deserves thanks and genuine praise for steadfast guidance.

Special thanks to Dr. William Miller, statistician and researcher extraordinaire. Dr. Miller made otherwise threatening formulas and procedures seem workable and usable.

Additional thanks to committee members Dr. Trevor Howe, Dr. Ross Engel and Dr. Donald McKay. Drs. Carl Larson and Jack Sanders worked tirelessly on Experienced Based Career Education and must be proud to survey the outcomes. Encouragement given by family and friends was constant and sustaining. Thank you Randy Rex McMullin, now and always.

I started the doctoral program and dissertation for myself but finished for my daughter Lindsay. May she come to know the freedom and opportunity that hard work and education can provide.
October 25, 1982

Dear EBCE Coordinators:

Since the mid 1970's, Experience Based Career Education programs have been in operation in each of our 50 States. During these years, a great deal of formative and summative evaluation has occurred. Here in Iowa, we have been involved for 7 years in an adaptation of the Appalachia Educational Laboratory Model as well as the new trainer-training project. In all of these efforts, short-term program evaluation was most prevalent. It appears that it is now time for some quantitative data to be gathered about the actual graduates of our EBCE programs.

As an EBCE advocate, trainer for our State, and Doctoral Student at Iowa State University, I am preparing to conduct a NATION-WIDE FOLLOW-UP OF EBCE GRADUATES. I will especially be looking for those who have been away from your programs for the longer periods of time.

In order to conduct the research project, I need your help. Please fill in the preliminary survey and return in the enclosed envelope by November 15. Even though I have been heavily involved in the AEL Model of EBCE, the research will examine all four models and the overall impact of EBCE upon the graduates.

I will be attempting to survey approximately 1,000 students which would be approximately 10% of the recent graduates. Since I am doing the work without a fellowship or grant, I need your cooperation in locating a designated number of your graduates. In return for your efforts, I will be pleased to share the project findings if you are interested in the results. It is hoped that the results of my sample of a nationwide population will provide a stronger data base for project review and hopefully future decisions and actions.

All mailings to you and the students will be postage pre-paid. Your major task will be to disseminate the surveys to a designated sample number of graduates.

Thank you in advance,

Jan McMahon, Director of Special Needs
Iowa Central Community College, Fort Dodge, Iowa

Dr. William D. Wolansky, Chairman
Dept. Of Industrial Education
Please read each of the items below and respond as directed. Your additional personal comments will be greatly appreciated. If you are willing to cooperate, a packet will be sent to you in the spring for distribution to a small percentage of your graduates.

1. The model of EBCE that my program is based on is:
   ___ Appalachia Educational Laboratory
   ___ Northwest Educational Laboratory
   ___ Farwest Educational Laboratory
   ___ Research for Better Schools
   ___ Executive Internship

2. The majority of my students are:
   ___ Sophomores
   ___ Juniors
   ___ Seniors
   ___ Other
   ___ General Education
   ___ Special Education

3. The majority of my students are in EBCE:
   ___ ½ school day, 5 days a week
   ___ ¾ school day, 5 days a week
   ___ 1 full school day, 5 days a week
   ___ other (please describe)

4. My students write weekly activity sheets to earn credit in an academic area:
   ___ Yes
   ___ No

5. The approximate amount of individual instruction I provide to each student each week is:
   ___ 15 minutes or less
   ___ 15 - 30 minutes
   ___ 30 - 45 minutes
   ___ 45 - 60 minutes
   ___ other (please describe)
6. I have conducted my own graduate follow-up.
   ____Yes  ____No
   (If yes, would you be willing to provide a copy of your instrument?)

7. Name and address of other local EBCE coordinators to send this survey to:
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________

8. I would be willing to help locate a representative sample of my EBCE graduates for this nation-wide research project.
   ____Yes  ____No
   If no, please comment__________________________________________
   ________________________________________________________________
   ________________________________________________________________

   This data will be summarized and your responses used confidentially in designing the student follow-up questionnaire. For the mailing list, please give your current address.

   Name__________________________  Title__________________________

   Address__________________________
   Street__________________________  City__________________________  State______  Zip_______

   Work Phone________________________
   (area code)_______________________  Number____________________
APPENDIX B: LISTING OF 54 MODEL PROJECTS
<table>
<thead>
<tr>
<th>Out-of-State Projects*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria, Virginia</td>
</tr>
<tr>
<td>Birmingham, Alabama</td>
</tr>
<tr>
<td>Coon Rapids, Minnesota</td>
</tr>
<tr>
<td>Cheyenne, Wyoming</td>
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<tr>
<td>Dekatur, Illinois</td>
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<tr>
<td>EDMONTON, Kentucky</td>
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<td>Fon du Lac, Wisconsin</td>
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<td>Kennewick, Washington</td>
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<td>Kenosha, Wisconsin</td>
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<td>Kodiak, Alaska</td>
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<td>LaCrosse, Wisconsin</td>
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<td>Lander, Wyoming</td>
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<tr>
<td>Laramie, Wyoming</td>
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<tr>
<td>Lexington, Kentucky</td>
</tr>
</tbody>
</table>

*Those listed above returned the initial survey and agreed to participate in the graduate follow-up study.*
Out-of-State Projects (continued)

Stamford, Connecticut
Sterling, Illinois
Urbana, Illinois
West Allis, Wisconsin
White Sands, New Mexico
Wichita, Kansas

In-State Projects

Ames, Iowa
Barnum
Clinton
Humboldt
Fort Dodge
Mapleton
Mason City
Storm Lake
DIRECTIONS: Answer the following questions by circling a number from 1 to 5 which best represents your response. Note that 5 represents the highest rating.

DEFINITELY NOT NO MAYBE YES DEFINITELY YES
1 2 3 4 5

1. If you had to do it over again, would you decide to participate in EBCE?
   1 2 3 4 5

2. As a result of EBCE did you make an occupational or a career choice?
   1 2 3 4 5

3. As a result of EBCE did your attitude toward work change?
   1 2 3 4 5

4. As a result of EBCE did your attitude toward education change?
   1 2 3 4 5

5. Do you think EBCE should include periodic meetings to discuss student experiences?
   1 2 3 4 5

6. Did EBCE help to find employment in the occupation or career of your choice?
   1 2 3 4 5

7. How would you rate the overall quality of your EBCE program?
   POOR BELOW AVERAGE FAIR GOOD EXCELLENT
   1 2 3 4 5

HOW HELPFUL DO YOU THINK YOUR EBCE EXPERIENCES HAVE BEEN IN ASSISTING YOU TO . . .

<table>
<thead>
<tr>
<th></th>
<th>No Help</th>
<th>Little Help</th>
<th>Somewhat Helpful</th>
<th>Helpful</th>
<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. develop self-awareness?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. develop self-confidence?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. take responsibility for your own actions?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. understand how your interests and abilities fit into potential careers?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. get along with others?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. communicate comfortably with adults?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

OVER
<table>
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<th>Question</th>
<th>No Help</th>
<th>Little Help</th>
<th>Somewhat Helpful</th>
<th>Helpful</th>
<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. accept valid criticism?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. learn about &quot;real life&quot; situations and responsibilities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. identify a personal goal?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. accept responsibility on the job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. learn how to problem-solve?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. organize and plan daily activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. prepare for the world of work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. find and keep a job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. learn to complete the necessary forms for jobs (applications, resumes or personal data sheets)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. learn about occupations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. prepare for education or training after high school?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. develop tolerance toward ideas and values of others?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. acquire new knowledge and transfer to new situations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. clearly organize and express thoughts?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. I was in the EBCE Program:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>___ Fall Semester 1978</td>
<td></td>
<td></td>
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<tr>
<td>___ Spring Semester 1979</td>
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<td>___ Fall Semester 1979</td>
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<tr>
<td>___ Spring Semester 1980</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

29. Present Age __________  Male _______  Female _______

30. Grade level(s) during EBCE:

___ Freshman  ___ Sophomore  ___ Junior  ___ Senior
31. My experience sites were primarily in:

- Rural settings
- Cities between 10,000 and 25,000
- Cities less than 10,000 population
- Cities larger than 25,000 people

32. Before entering the EBCE Project, my previous work included the following:

- babysitting, lawn mowing and other domestic assignments
- volunteer work for the community, a church, or other needy organization
- work at 1 business or industry for 10-20 hours per week (examples would be a restaurant, gas station, grocery store)
- work at 2 or more businesses on a part-time basis
- work at a full-time job during the summer on a paid basis

33. What is your present status?

- student at a 2 year college
- student at a 4 year college
- student at a vocational school or technical institute
- employed full-time
- employed part-time
- unemployed
- homemaker
- military
- other (please specify)

34. Which, if any, of the following apply to you?

- I am working now in an area that is very similar to one of my EBCE job sites.
- I am not in an area similar to that of my EBCE job sites but I was immediately after graduation.
- EBCE helped me to find a summer job.
- An EBCE employer hired me on a paid basis.
- EBCE helped me to learn what kinds of work I do not like.

35. There are various ways that your teacher/coordinator worked with you in the program. Please check the type that is most like your EBCE experience.

- My teacher was a coordinator who worked with me on a one-to-one basis.
- My teacher was a coordinator who worked with me on a one-to-one basis on the job placement component and related assignments such as Math or English.
- My program was offered by two different teachers. One worked on job placement and the other worked on related instruction.

36. How often did you meet with your EBCE Learning Coordinator(s)?

- one-half hour per week
- one hour per week
- one-half hour every two weeks
- less than a half hour per week
- more than an hour every week
- less than a half hour every two weeks
- other (please describe)

37. Check the number of job sites that you personally explored during the total program:

- One  
- Two
- Three
- More than three (please indicate amount) _______
38. Indicate the amount of time spent at the job site each week?

   [ ] less than 5 clock hours
   [ ] 5-10 clock hours
   [ ] 10-15 clock hours
   [ ] more than 15 clock hours (please specify) ______________________________________

39. Which of the following course areas did you combine with your job site experience?

   [ ] Math
   [ ] Language Arts
   [ ] Science
   [ ] Social Science
   [ ] I did not combine an academic subject with EBCE. My program was Career Exploration only.
   [ ] Other (please list) _____________________________________________________________

THANK YOU

Please used the enclosed envelope and return immediately.
GRADUATE SURVEY

DIRECTIONS: Answer the following questions by circling a number from 1 to 5 which best represents your response. Note that 5 represents the highest rating.

<table>
<thead>
<tr>
<th>DEFINITELY NOT</th>
<th>NO</th>
<th>MAYBE</th>
<th>YES</th>
<th>DEFINITELY YES</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. If you had to do it over again, would you decide to participate in Co-op?
   1    2    3    4    5

2. As a result of Co-op did you make an occupational or a career choice?
   1    2    3    4    5

3. As a result of Co-op did your attitude toward work change?
   1    2    3    4    5

4. As a result of Co-op did your attitude toward education change?
   1    2    3    4    5

5. Do you think Co-op should include periodic meetings to discuss student experiences?
   1    2    3    4    5

6. Did Co-op help to find employment in the occupation or career of your choice?
   1    2    3    4    5

7. How would you rate the overall quality of your Co-op program?
   POOR | BELOW AVERAGE | FAIR | GOOD | EXCELLENT
   1    2    3    4    5

HOW HELPFUL DO YOU THINK YOUR CO-OP EXPERIENCES HAVE BEEN IN ASSISTING YOU TO . . .

8. develop self-awareness?  
   No Help | Little Help | Somewhat Helpful | Helpful | Very Helpful
   1    2    3    4    5

9. develop self-confidence?  
   1    2    3    4    5

10. take responsibility for your own actions?  
    1    2    3    4    5

11. understand how your interests and abilities fit into potential careers?  
    1    2    3    4    5

12. get along with others?  
    1    2    3    4    5

13. communicate comfortably with adults?  
    1    2    3    4    5

OVER
<table>
<thead>
<tr>
<th></th>
<th>HOW HELPFUL DO YOU THINK YOUR CO-OP EXPERIENCES HAVE BEEN IN ASSISTING YOU TO . . .</th>
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<tbody>
<tr>
<td>14.</td>
<td>accept valid criticism?</td>
</tr>
<tr>
<td></td>
<td>No Help</td>
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<td>1</td>
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<tr>
<td>15.</td>
<td>learn about &quot;real life&quot; situations and responsibilities?</td>
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<td></td>
<td>1</td>
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<tr>
<td>16.</td>
<td>identify a personal goal?</td>
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<td></td>
<td>1</td>
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<tr>
<td>17.</td>
<td>accept responsibility on the job?</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>18.</td>
<td>learn how to problem-solve?</td>
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<td></td>
<td>1</td>
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<td>19.</td>
<td>organize and plan daily activities?</td>
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<td></td>
<td>1</td>
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<tr>
<td>20.</td>
<td>prepare for the world of work?</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>21.</td>
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</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>22.</td>
<td>learn to complete the necessary forms for jobs (applications, resumes or personal data sheets)?</td>
</tr>
<tr>
<td></td>
<td>1</td>
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<tr>
<td>23.</td>
<td>learn about occupations?</td>
</tr>
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<td></td>
<td>1</td>
</tr>
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<td>24.</td>
<td>prepare for education or training after high school?</td>
</tr>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>25.</td>
<td>develop tolerance toward ideas and values of others?</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>26.</td>
<td>acquire new knowledge and transfer to new situations?</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>27.</td>
<td>clearly organize and express thoughts?</td>
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<td></td>
<td>1</td>
</tr>
<tr>
<td>28.</td>
<td>I was in the Co-op Program:</td>
</tr>
<tr>
<td></td>
<td>Fall Semester 1978</td>
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<tr>
<td></td>
<td>Spring Semester 1979</td>
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<td></td>
<td>Fall Semester 1979</td>
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<td>Spring Semester 1980</td>
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<td>Fall Semester 1980</td>
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<td>Spring Semester 1981</td>
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<td></td>
<td>Fall Semester 1981</td>
</tr>
<tr>
<td></td>
<td>Spring Semester 1982</td>
</tr>
<tr>
<td>29.</td>
<td>Present Age</td>
</tr>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>30.</td>
<td>Grade level(s) during Co-op:</td>
</tr>
<tr>
<td></td>
<td>Freshmen</td>
</tr>
</tbody>
</table>
31. My experience sites were primarily in:
   - [ ] Rural settings
   - [ ] Cities between 10,000 and 25,000
   - [ ] Cities less than 10,000 population
   - [ ] Cities larger than 25,000 people

32. Before entering the Co-op Project, my previous work included the following:
   - [ ] babysitting, lawn mowing and other domestic assignments
   - [ ] volunteer work for the community, a church, or other needy organization
   - [ ] work at 1 business or industry for 10-20 hours per week (examples would be
     a restaurant, gas station, grocery store)
   - [ ] work at 2 or more businesses on a part-time basis
   - [ ] work at a full-time job during the summer on a paid basis

33. What is your present status?
   - [ ] student at a 2 year college
   - [ ] student at a 4 year college
   - [ ] student at a vocational school or technical institute
   - [ ] employed full-time
   - [ ] employed part-time
   - [ ] unemployed
   - [ ] homemaker
   - [ ] military
   - [ ] other (please specify)

34. Which, if any, of the following apply to you?
   - [ ] I am working now in an area that is very similar to one of my Co-op job sites.
   - [ ] I am not in an area similar to that of my Co-op job sites but I was
     immediately after graduation.
   - [ ] Co-op helped me to find a summer job.
   - [ ] A Co-op employer hired me on a paid basis.
   - [ ] Co-op helped me to learn what kinds of work I do not like.

35. There are various ways that your teacher/coordinator worked with you in the program
   Please check the type that is most like your Co-op experience.
   - [ ] My teacher was a coordinator who worked with me on a one-to-one basis.
   - [ ] My teacher was a coordinator who worked with me on a one-to-one basis on
     the job placement component and related assignments such as Math or English.
   - [ ] My program was offered by two different teachers. One worked on job placement
     and the other worked on related instruction.

36. How often did you meet with your Co-op Learning Coordinator(s)?
   - [ ] one-half hour per week
   - [ ] one hour per week
   - [ ] one-half hour every two weeks
   - [ ] less than a half hour per week
   - [ ] more than an hour every week
   - [ ] less than a half hour every two weeks
   - [ ] other (please describe)

37. Check the number of job sites that you personally explored during the total program:
   - [ ] One
   - [ ] Two
   - [ ] Three
   - [ ] More than three (please indicate amount)
38. Indicate the amount of time spent at the job site each week?

- less than 5 clock hours
- 5-10 clock hours
- 10-15 clock hours
- more than 15 clock hours (please specify) __________________________________________

39. Which of the following course areas did you combine with your job site experience?

- Math
- Language Arts
- Science
- Social Science
- I did not combine an academic subject with Co-op. My program was work experience only.
- Other (please list) _______________________________________________________________

THANK YOU

Please used the enclosed envelope and return immediately.
APPENDIX D: PILOT STUDY COVER LETTER
Dear Graduates:

I am interested in your progress after you left our program a few years ago. As a former student in an experience based career education program, you are an important source of valuable information for the improvement of future programs.

We have been asked to help with a Nation-wide follow-up of graduates who were enrolled in programs like ours. The research will be conducted by a learning coordinator, Janet McMahill, with the cooperation of Iowa State University.

Please take a few minutes of your time to complete the attached questionnaire. Return it in the enclosed, self-addressed and stamped envelope by April 22nd. The results will be helpful to me at the local level as well as to the researcher working on the national project with Iowa State.

Your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Please note that the survey refers to "EBCE". That is the term used in several of the states. As you read the survey items, please substitute our project title in its place.

Thank you for your cooperation. I look forward to your response.

Sincerely,
APPENDIX E: QUESTIONNAIRE USED IN PILOT STUDY
SURVEY QUESTIONNAIRE

DIRECTIONS: Answer the following questions by circling a number from 1 to 5 which indicates your response.

1. How would you rate the overall quality of your E.B.C.E. program?

   Poor    Below Average   Fair   Good   Excellent
   1       2               3       4       5

2. If you had it to do over again, do you think you would decide to participate in E.B.C.E.

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

3. As a result of your E.B.C.E. experience did you make an occupational or career choice?

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

4. As a result of E.B.C.E. did your attitudes toward work change?

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

5. As a result of E.B.C.E did your attitudes toward education change?

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

6. Do you think E.B.C.E should include periodic group meetings to discuss student experience?

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

7. Did E.B.C.E. help you find employment in the occupation or career of your choice?

   Definitely Not   No   Maybe   Yes   Definitely Yes
   1             2     3       4       5

DIRECTIONS: Please check the appropriate response to the following questions.

8. Do you think the E.B.C.E experience should be one semester or a full year?

   One Semester   One Year

9. After graduation from high school, in which area did you become involved?

   World of Work   Homemaking
   Vocational School   Military
   Four-Year College   Other
10. What is your present status?

- Student at a Four-Year College
- Student at a Vocational School
- Military
- Other

DIRECTIONS: Answer the following questions by circling a number from 1 to 5 which indicates your response.

How helpful do you think your E.B.C.E. experiences have been in assisting you to...

<table>
<thead>
<tr>
<th>Question</th>
<th>No Help</th>
<th>Little Help</th>
<th>Somewhat Helpful</th>
<th>Helpful</th>
<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. develop self-awareness?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. develop self-confidence?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. take responsibility for your own actions?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. understand how your interests and abilities fit into potential careers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. get along with others?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. communicate comfortably with adults?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. accept valid criticism?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. learn about &quot;real life&quot; situations and responsibilities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. identify a goal?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. accept adult responsibilities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>22. organize and plan daily activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. prepare for the world of work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. find and keep a job?</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. learn to complete the necessary forms for employment (job applications, resumes or personal data sheets)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. learn about occupations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27. prepare for post-secondary educational experience?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. develop tolerance toward ideas and values of others?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>No Help</td>
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</tr>
<tr>
<td>29. acquire new knowledge and transfer to new situations?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. clearly organize and express thoughts?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

31. Please make any additional comments (positive or negative about the E.B.C.E. program, staff, or your personal experience)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

BACKGROUND IDENTIFICATION

Name_________________________________________Age at time of EBCE___________Age now__________

Male____ Female_____ City and State of EBCE (or other) Project__________________________

Previous Work Experience before entering EBCE:__________________________________________

________________________________________________________________________

Actual Length of time in project: (check the one that applies)

_____ One quarter

_____ One semester

_____ Two Semesters

_____ Other (Please explain) ________________________________________________
There are various ways that your teacher/coordinator offered the program to you. Please check the type that is most like your EBCE experience:

_____ My teacher was a coordinator who worked with me on a one-to-one basis on the job placement component only.

_____ My teacher was a coordinator who worked with me on a one-to-one basis on the job placement component and related assignments such as Math or English.

_____ My teachers were two different people who worked on the job placement and the related instruction component.

I saw my coordinator approximately:

_____ One-half hour per week

_____ One hour per week

_____ One-half hour every two weeks

_____ One hour every two weeks

_____ Less than a half hour per week

_____ More than an hour per week

_____ Less than a half hour every two weeks

_____ Other

Check the number of job sites explored during the total program:

_____ One

_____ Two

_____ Three

_____ More than three

Indicate the amount of time spent at the job site each week:

_____ Less than 5 clock hours

_____ 5 - 10 clock hours

_____ 10 - 15 clock hours

_____ More than 15 clock hours

Which of the following course areas did you combine with your job site experience?

_____ Math

_____ Science

_____ Other (Please list)

_____ Language Arts

_____ Social Studies

I did not write activity sheets in academic courses. My EBCE program was Career Exploration only.

THANK YOU VERY MUCH FOR YOUR TIME AND ASSISTANCE. PLEASE RETURN THE SURVEY TO YOUR LOCAL COORDINATOR BY MAY 1st.
GRADUATE SURVEY

DIRECTIONS: Answer the following questions by circling a number from 1 to 5 which best represents your response. Note that 5 represents the highest rating for an item.

1. How would you rate the overall quality of your E.B.C.E. program?
   Poor  Below Average  Fair  Good  Excellent
   1     2             3     4     5

2. If you had to do it over again, would you decide to participate in E.B.C.E.?
   Definitely Not  No  Maybe  Yes  Definitely Yes
   1     2             3     4     5

3. As a result of E.B.C.E. did you make an occupational or a career choice?
   Definitely Not  No  Maybe  Yes  Definitely Yes
   1     2             3     4     5

4. As a result of E.B.C.E. did your attitude toward work change?
   Definitely Not  No  Maybe  Yes  Definitely Yes
   1     2             3     4     5

5. As a result of E.B.C.E did your attitudes toward education change?
   Definitely Not  No  Maybe  Yes  Definitely Yes
   1     2             3     4     5

6. Do you think E.B.C.E. should include periodic meetings to discuss student experiences?
   Definitely Not  No  Maybe  Yes  Definitely Yes
   1     2             3     4     5

7. Did E.B.C.E. help to find employment in the occupation or career of your choice?
   Definitely not  No  Maybe  Yes  Definitely
   1     2             3     4     5

HOW HELPFUL DO YOU THINK YOUR E.B.C.E. EXPERIENCES HAVE BEEN IN ASSISTING YOU TO...

   No  Little  Somewhat  Helpful  Helpful  Very
   Help  Help  Helpful  Helpful  Helpful

8. develop self-awareness  1  2  3  4  5

9. develop self-confidence  1  2  3  4  5
<table>
<thead>
<tr>
<th></th>
<th>HOW HELPFUL DO YOU THINK YOUR E.B.C.E. EXPERIENCES HAVE BEEN IN ASSISTING YOU TO. . .</th>
<th>No Help</th>
<th>Little Help</th>
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</thead>
<tbody>
<tr>
<td>10.</td>
<td>take responsibility for your own actions?</td>
<td>1</td>
<td>2</td>
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<td>get along with others</td>
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<td>accept valid criticism?</td>
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<td>15.</td>
<td>learn about &quot;real life&quot; situations and responsibilities?</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16.</td>
<td>identify a personal goal?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17.</td>
<td>accept responsibility on the job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18.</td>
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<td>24.</td>
<td>prepare for education or training after high school?</td>
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<td></td>
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<td>25.</td>
<td>develop tolerance toward ideas and values of others?</td>
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<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
How helpful do you think your E.B.C.E. Experiences have been in assisting you to...  

<table>
<thead>
<tr>
<th>No Help</th>
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<th>Somewhat Helpful</th>
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<th>Very Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

26. acquire new knowledge and transfer to new situations? 

27. clearly organize and express thoughts? 

---

**BACKGROUND INFORMATION**

In this section, please fill in the blanks or check the appropriate response. Again remember that your name will not be used in the research report. Your cooperation is appreciated.

Name ___________________________ Age at time of participation in EBCE ________

Year of participation in EBCE______ Male ________ Female ________

School __________________________ City ______________________ State ________

Previous work experience before entering EBCE: ____________________________

Length of time in project: (check the one that best applies.)

_______ One quarter

_______ Two semesters

_______ One semester

_______ Other (please explain)________

After graduation from high school, in which area did you become involved?

_______ World of Work

_______ Homemaking

_______ Vocational school

_______ Military

_______ Four-year college

_______ Other (please specify) ________

Which of the following, if any, apply to you? (You may check none, one or several responses.)

_______ I am working now in an area that is very similar to one of my EBCE job sites.

_______ I am not in an area similar to that of my EBCE job sites but I was immediately after graduation.

_______ EBCE helped me to find a summer job.

_______ An EBCE employer hired me on a paid basis.

_______ EBCE helped me to learn what kinds of work I do not like.

What is your present status? (check as many as apply)

_______ Student at a 2 year college

_______ Employed full-time

_______ Military

_______ Student at a 4 year college

_______ Employed part-time

_______ Other (Please Specify)

_______ Student at a Vocational school

_______ Unemployed

_______ Specified

_______ or technical institute

_______ Homemaker
There are various ways that your teacher/coordinator worked with you in the program. Please check the type that is most like your EBCE experience.

_____ My teacher was a coordinator who worked with me on a one-to-one basis on the job placement component only.

_____ My teacher was a coordinator who worked with me on a one-to-one basis on the job placement component and related assignments such as Math or English.

_____ My program was offered by two different teachers. One worked on job placement and the other worked on related instruction.

How often did you meet with your EBCE Learning Coordinator(s)?

_____ one-half hour per week

_____ one hour per week

_____ one-half hour every two weeks

_____ other (please describe)

Less than a half hour per week

More than an hour every week

Less than a half hour every two weeks

Check the number of job sites that you personally explored during the total program:

_____ One

_____ Two

_____ Three

_____ More than three (please indicate amount)

Indicate the amount of time spent at the job site each week?

_____ Less than 5 clock hours

_____ 5 - 10 clock hours

_____ 10 - 15 clock hours

_____ More than 15 clock hours (please specify)

Which of the following course areas did you combine with your job site experience? (You may check more than one subject area.)

_____ Math

_____ Language Arts

_____ Science

_____ Social Science

_____ Other (please list)

_____ I did not combine an academic subject with EBCE. My program was Career Exploration only.

In the space that remains, please make any additional comments (positive or negative) about the EBCE program, staff, job site, or your personal experience. Use the back if you need to.

Program

____________________________________________________________________

____________________________________________________________________

Staff

____________________________________________________________________

____________________________________________________________________

Job site or personal experience

____________________________________________________________________

____________________________________________________________________
APPENDIX F: CORRESPONDENCE WITH LEARNING COORDINATORS
AND GRADUATES
April 15, 1983

Dear Coordinator of Co-op Education:

Thank you for agreeing to help with a research project this spring.

Janet McMahill of Iowa Central Community College is conducting the nation-wide follow-up of Co-op students and students who were enrolled in Experience Based Career Education. The goals of the project are to determine what effect the programs had on the development of personal-social skills, job seeking skills, and actual job placement.

In order to conduct the research, a proper instrument needs to be field tested. We have what we believe to be a short and concise instrument. But we would like for 15 of your students to complete the survey to determine the reliability. We are asking for a random sample of your graduates from the years of 1978-1982 selected by you! Enclosed in the packet are the following materials:

1. sample letter to students that you might want to include using your school letterhead
2. 15 copies of the questionnaire
3. 15 postage paid envelopes

Please try to distribute the questionnaires in April so that we might have the results by May 15th. We have learned that two weeks is the best amount of time to allow students to respond.

If you have questions, please feel free to call Jan in Fort Dodge at 515-576-7201.

In return for your cooperation, you will provided with a summary of the final results next fall.

Sincerely,

Dr. William D. Wolansky
Dear Committee Members:

Thank you for consenting to meet for the purpose of approving my dissertation proposal. As a reminder, we will meet at 9:30 a.m. on Tuesday, March 15th, in Room 222 of the Industrial Ed Building.

I will have a copy of the proposal in your hands before March 15th for your review. Until that time, you can read the enclosed information that I prepared last semester for Dr. Howe's class.

On March 25, I have been asked to speak at the National School-to-Work Transitions Convention in Orlando, Florida about my graduate follow-up of EBCE students. Our meeting on the 15th should provide helpful insights for my presentation. I plan to distribute many of the graduate surveys to coordinators who will be at the meeting and save a considerable amount of postage. To date, 46 major projects have consented to submit my survey to their graduates!

I have appreciated your assistance throughout my graduate work. After this semester, I will be 3 hours short of completing my degree.

Sincerely,

Jan McMahill
Director Special Needs
Iowa Central Community College
April, 1983

Dear Graduates:

I am interested in your progress after you left our program a few years ago. As a former student in a co-operative education program with actual job placement, you are an important source of valuable information for the improvement of future programs.

We have been asked to help with a Nation-wide follow-up of graduates from the years 1978-1982. The research will be conducted by a coordinator from the Fort Dodge area, Janet McMahill. Mrs. McMahill is working on the project with Dr. William Wolansky of Iowa State University, Department of Industrial Education.

Please take a few minutes of your time to complete the attached questionnaire. Return it in the envelope enclosed by May 15th. The results will be helpful to me at our school as well as to other teachers like me who are trying to maintain programs.

Your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Thanks for your cooperation. I look forward to your response.

Sincerely,
May 7, 1984

Dear Coordinator of Co-op Education:

We need your help!

Janet McMahill of Fort Dodge Public Schools is conducting the nation-wide follow-up of Co-op students and students who were enrolled in Experience Based Career Education. The goals of the project are to determine what effect the programs had on the development of personal-social skills, job seeking skills, and actual job placement.

In order to conduct the research, a proper instrument needs to be filed tested. We have what we believe to be a short and concise instrument. But we would like for 10 of your students to complete the survey to determine the reliability. We are asking for a random sample of your graduates from the years of 1978-1982 selected by you!

Enclosed in the packet are the following materials:

1. sample letter to students that you might want to include using your school letterhead
2. 10 copies of the questionnaire
3. 10 return envelopes

Please try to distribute the questionnaires immediately so that we might have the results by June 5th. We have learned that two weeks is the best amount of time to allow students to respond.

If you have questions, please feel free to call Jan in Fort dodge at 515-576-1161.

Sincerely,

Dr. William D. Wolansky
Dear Graduates:

I am interested in your progress after you left our program a few years ago. As a former student in a co-operative education program with actual job placement, you are an important source of valuable information for the improvement of future programs.

We have been asked to help with a Nation-wide follow-up of graduates from the years 1978-1982. The research will be conducted by a coordinator from the Fort Dodge area, Janet McMahill. Mrs. McMahill is working on the project with Dr. William Wolansky of Iowa State University, Department of Industrial Education.

Please take a few minutes of your time to complete the attached questionnaire. Return it in the envelope enclosed by May 25th. The results will be helpful to me at our school as well as to other teachers like me who are trying to maintain programs.

your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Thanks for your cooperation. I look forward to your response.

Sincerely,
May, 1984

Dear Graduates:

I am interested in your progress after you left our program a few years ago. As a former student in a co-operative education program with actual job placement, you are an important source of valuable information for the improvement of future programs.

We have been asked to help with a Nation-wide follow-up of graduates from the years 1978 - 1982. The research will be conducted by a coordinator from the Fort Dodge area, Janet McMahill. Mrs. McMahill is working on the project with Dr. William Wolansky of Iowa State University.

Please take a few minutes of your time to complete the enclosed questionnaire. Return it in the envelope attached by May 31st. The results will be helpful to me at our school as well as to other teachers like me who are trying to maintain programs.

Your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Thanks for your cooperation. I look forward to your response.

Sincerely,
1100 Colonial Drive
Fort Dodge, Iowa 50501

November 15, 1983

Dear Coordinators:

At Last! I am sending your packets of EBCE materials to distribute to your graduates.

Each packet is prepared to your specifications. All of you have questionnaires, and return envelopes included. Some of you have postage to help you with the return effort.

Notice the sample letter to graduates. It is ready for you to print on your own school or project letterhead. Please feel free to use it or write your own notes to graduates.

SELECT STUDENTS WHO WERE IN YOUR PROGRAM FROM THE YEARS 1978 TO 1983. Although I am not restricting your sample or telling you which years to select from, I believe our effort will be strengthened if you make an attempt to randomly select students from as many years as possible.

Please mail the questionnaires to the students by Dec. 1. The sample letter asks the students to return the survey to you by December 15. For your convenience, I have also enclosed an envelope with my label on it for the return.

The question is always asked, how many surveys constitutes an "adequate" sample. I am shooting for 75% return. When you have 75% of your surveys in hand, bundle them and return to me. I will still accept those that come in after Dec. 15 but I need to have the majority in to send to keypunch over the holidays.

I am still encouraged by the overwhelming cooperation shown by 40 of you who are participating in the national study. I have not forgotten my promise to give you each a copy of the results.

Sincerely,

Jan McMahon
515-573-7807 (home) 515-576-7201 (office)
May 10, 1984

Dear Coordinator of Co-op Education:

We need your help!

Janet McMahill of Fort Dodge Public Schools is conducting the nation-wide follow-up of Co-op students and students who were enrolled in Experience Based Career Education. The goals of the project are to determine what effect the programs had on the development of personal-social skills, job seeking skills, and actual job placement.

In order to conduct the research, we are asking each of you to mail questionnaires to ten graduates. Please select at random, any ten students who graduated from your program during the years 1978 - 1982. To help you with this process, please find enclosed:

1. sample letter to students for you to sign, zerox, and include with their surveys
2. 10 copies of the questionnaire
3. 10 return envelopes

We realize what a busy time this is for all of you. We thought that our asking each teacher in Iowa to complete mailing of just ten questionnaires, the coverage would be wide and your time commitment minimal.

We are asking for you to mail these to students immediately. The students are requested to mail returns by May 31st. If you have questions, please feel free to call Jan in Fort Dodge at 515-576-1161.

Sincerely,

Dr. William D. Wolansky
Dear Graduates:

I am interested in your progress after you left our program a few years ago. As a former student in an experience based career education program, you are an important source of valuable information for the improvement of future programs.

We have been asked to help with a Nation-wide follow-up of graduates who were enrolled in programs like ours. The research will be conducted by a learning coordinator, Janet McMahill, with the cooperation of Iowa State University.

Please take a few minutes of your time to complete the attached questionnaire. Return it in the enclosed, self-addressed and stamped envelope by April 22nd. The results will be helpful to me at the local level as well as to the researcher working on the national project with Iowa State.

Your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Please note that the survey refers to "EBCE". That is the term used in several of the states. As you read the survey items, please substitute our project title in its place.

Thank you for your cooperation. I look forward to your response.

Sincerely,
DEAR EBCE COORDINATORS:

THANK YOU FOR OUTSTANDING COOPERATION IN THE DISTRIBUTION OF THE GRADUATE FOLLOW-UP SURVEY. AT THE PRESENT TIME, THE RETURN RATE IS RUNNING WELL AHEAD OF 50%. I AM PLEASED!

IF YOU HAVE NOT YET DISTRIBUTED YOUR QUESTIONNAIRES, IT IS NOT TOO LATE TO DO SO. I WANTED THE GREATEST SHARE OF THEM TO GO OUT BEFORE THE HOLIDAYS SO THAT I COULD BEGIN TO ENTER THE DATA. I HAD NO INTENTIONS OF COMPLETING THE STUDY THIS MONTH SO THERE IS STILL TIME TO SEND YOUR MATERIALS OUT.

SOME OF YOU BUNDLED THE MAJORITY OF YOUR SURVEYS AND HAVE BEEN SENDING THE "STRAGGLERS" EVERY FEW DAYS. I REALLY APPRECIATE THIS AND BELIEVE THAT EVERY SINGLE STUDENT COUNTS!

DR. ZINTA SANDERS AND HER COLLEAGUES IN LAS CRUCES, NEW MEXICO ARE USING THIS SURVEY AS A MAJOR RESEARCH EFFORT. THEY ARE MAILING TO 300 STUDENTS THIS MONTH. THANKS TO ZINTA FROM ALL OF US.

AS ALWAYS, IF YOU HAVE ANY QUESTIONS, PLEASE DO NOT HESITATE TO WRITE OR CALL. DURING THIS PROCESS, I HAVE HAD A CHANCE TO MEET OR TALK TO OVER HALF OF YOU IN PERSON. HOW DOES THE T.V. SLOGAN GO..."THANKS TO YOU IT IS WORKING?"

SINCERELY,

JAN MCMAHILL
HOME: 515-573-7807
OFFICE: 515-576-7201
Dear Graduates:

As a former student in an experienced based career education program, you are a valuable source of information for future programs. I am interested in your progress after you left our program a few years ago.

We have been asked to help with a Nation-wide follow-up of graduates who are enrolled in programs like ours. The material research will be conducted by a project leader like me (a Janet McMahlill from the Iowa program) with the cooperation of Iowa State University.

Please take a few minutes of your time to complete the enclosed questionnaire. Return it in the enclosed, self-addressed and stamped envelope before May 1st. I will have a chance to look at our local results before sending our surveys on to Iowa State University.

Your responses will be held in strict confidence. No reference to specific persons will appear in the final report.

Your assistance in completing the survey is greatly appreciated. As a former participant you are the best one to aid in the evaluation of experience-based learning.

Please note that the survey refers to "EBCE". That is the term used in several of the states. As you read it, please substitute our project title in its place.

I look forward to hearing from you.

Sincerely,
EBCE Information Sheet for Research

Please list your name and address exactly as you want your mailing labels to be printed:

Name ____________________________
School __________________________
Street __________________________
City _____________________________ State ___________ Zip ___________

Number of questionnaires you will distribute ____________________________ *

Please check the following as applicable:

___ I can pay all postage costs. Just send cover letters, envelopes, labels, and surveys.

___ I can pay postage to send to the students but would like Jan to include stamps for the students to use when returning the surveys to me.

___ I am unable to help with any of the postage. Please provide complete kits.

PLEASE MAIL THIS FORM IMMEDIATELY. THE MAJOR RESEARCH NEEDS TO BE DONE THIS NOVEMBER BEFORE THE HOLIDAYS.

*To get a 10% national sample, each coordinator needs to distribute at least 20. If you are a very large project and can assist with the postage, I will send as many packets as you wish!
October 31, 1983

Dear Coordinators:

Thank you for agreeing to help conduct the nation-wide follow-up of EBCE students.

In a few days I will be mailing the packets to you for distribution to a sample of graduates from the years 1978 to 1982.

Before I mail the surveys to you, I need a final check on your correct address, postage preference, and number of students.

The Pilot Study that I conducted after the March convention in Orlando indicated that I had an instrument that was over 80% reliable using a sophisticated statistical procedure. Thanks to those who helped with that effort.

The greatest change in my research method will be to have the students mail their results directly to you. Coordinators in the Pilot commented that they could have helped check on non-respondents and that they would have liked to have seen their individual results.

I still am willing to provide research results to each of you who assist with this effort. The student responses thusfar are very positive. I am convinced that we need better data to support the continuation of our projects.

Please return the enclosed form by November 9. After receiving it, I will print your personal mailing labels and affix to envelopes for you.

Sincerely,

Jan McMahon
1100 Colonial Drive
Fort Dodge, Iowa 50501

Home Phone: 515-573-7807
Office Phone: 515-576-7201
(Iowa Central Community College)
October 25, 1982

Dear EBCE Coordinators:

Since the mid 1970's, Experience Based Career Education programs have been in operation in each of our 50 States. During these years, a great deal of formative and summative evaluation has occurred. Here in Iowa, we have been involved for 7 years in an adaptation of the Appalachia Educational Laboratory Model as well as the new trainer-training project. In all of these efforts, short-term program evaluation was most prevalent. It appears that it is now time for some quantitative data to be gathered about the actual graduates of our EBCE programs.

As an EBCE advocate, trainer for our State, and Doctoral Student at Iowa State University, I am preparing to conduct a NATION-WIDE FOLLOW-UP OF EBCE GRADUATES. I will especially be looking for those who have been away from your programs for the longer periods of time.

In order to conduct the research project, I need your help. Please fill in the preliminary survey and return in the enclosed envelope by November 15. Even though I have been heavily involved in the AEL Model of EBCE, the research will examine all four models and the overall impact of EBCE upon the graduates.

I will be attempting to survey approximately 1,000 students which would be approximately 10% of the recent graduates. Since I am doing the work without a fellowship or grant, I need your cooperation in locating a designated number of your graduates. In return for your efforts, I will be pleased to share the project findings if you are interested in the results. It is hoped that the results of my sample of a nationwide population will provide a stronger data base for project review and hopefully future decisions and actions.

All mailings to you and the students will be postage pre-paid. Your major task will be to disseminate the surveys to a designated sample number of graduates.

Thank you in advance,

Jan McMahill, Director of Special Needs
Iowa Central Community College, Fort Dodge, Iowa

Dr. William D. Wolansky, Chairman
Dept. Of Industrial Education