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ANALYSIS OF SELECTED VARIABLES RELATED TO PARTICIPATION IN COOPERATIVE EDUCATION BY VOCATIONAL OFFICE OCCUPATIONS PROGRAM COMPLETERS IN MICHIGAN FOR THE YEARS 1978 THROUGH 1981

Michigan State University PH.D. 1985

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ANALYSIS OF SELECTED VARIABLES RELATED TO PARTICIPATION IN COOPERATIVE EDUCATION BY VOCATIONAL OFFICE OCCUPATIONS PROGRAM COMPLETERS IN MICHIGAN FOR THE YEARS 1978 THROUGH 1981

By

Sandra Lynne Sandberg

A DISSERTATION

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ABSTRACT

ANALYSIS OF SELECTED VARIABLES RELATED TO PARTICIPATION IN COOPERATIVE EDUCATION BY VOCATIONAL OFFICE OCCUPATIONS PROGRAM COMPLETERS IN MICHIGAN FOR THE YEARS 1978 THROUGH 1981

By

Sandra Lynne Sandberg

The purpose of this study was to demonstrate the relationship of selected variables of related employment, job satisfaction, and wage rate for male and female completers of vocational office occupations training to participation in cooperative education programs. The follow-up survey developed by the Michigan Education Department, Vocational-Technical Education Service, provided information on completers of vocational education programs classified as Office Occupations CIP 07.0601, during the school years 1978 through 1981.

The chi-square statistic, the t-test, and the analysis of variance were selected to examine percentage differences, mean differences, and interaction, respectively, for the selected variables. Seventeen hypotheses were tested. The results of the analysis (best illustrated by the graphs that appear in the text) showed that of those who were employed, participants appeared to have a higher rate of related employment. For female respondents the rate remained within a few percentage points over the years studied. Conversely, the related

employment status for male participants declined over the same period. Both male and female participants showed progressively less unrelated employment over the years studied.

Job satisfaction remained higher for participants than nonparticipants, and when examined for gender, the pattern was much the same, with an increase in job satisfaction for cooperative education participants. Wage rates declined for all completers over the years studied. It was found that male participants received higher wages than female participants despite the fact that vocational office occupations is a traditionally female occupation. In general, the conclusions drawn from this study indicate that secondary vocational office occupations program completers in Michigan, who had participated in cooperative education programs over the years of this study, fared better than nonparticipants with respect to related employment, job satisfaction, and wages.

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CHAPTER I

THE PROBLEM

Introduction

Cooperative education has been described as an instructional method in vocational education and "has as its primary goal the development of occupational competency" (Mason, Haines, & Furtado, 1981). Cooperative education as an instructional method provides students the opportunity to participate in required academic courses at school, alternately with employment in a related wage-earning job (Wanat & Snell, 1980). Cooperative education programs at both secondary and postsecondary institutions must be planned and supervised so that school and employment contribute to the student's education and employability (Humbert & Woloszyk, 1983).

The apprenticeship system used in colonial America, which allowed individuals to become masters in a craft, set the stage for development of cooperative education. The first recorded cooperative education program, however, was that begun in 1906 when Herman Schneider, professor of engineering at the University of Cincinnati, was given authorization to institute a cooperative education program for his engineering students. The students were required to participate in applicable work experience in alternate sessions with classwork (Knowles, 1971). The first secondary-level cooperative education

program began in 1909 at Fitchburg, Massachusetts, in cooperation with the General Electric Company. In 1911, an experimental high school program was established at York, Pennsylvania, followed by the establishment of several other programs in Ohio and New York. In 1917, the passage of the Smith-Hughes Act provided funding for vocational education in the areas of agriculture, trades and industry, home economics, and teacher training. Schools were encouraged by the Federal Board for Vocational Education to establish cooperative education programs. The program established by the National Youth Administration, which provided part-time work and part-time training for young people in 1935, and manpower shortages during World War II helped spread interest in programs that combined work experience with school (Tyler, 1956).

In 1946, the George Barden Act authorized additional funds for vocational education programs, this time including support for cooperative education. In 1955, the Rosenberg Foundation gave a $50,000 grant in support of a country-wide cooperative education program. In 1957, encouraged by Charles F. Kettering, then director of General Motors and a strong advocate of cooperative education, the Thomas Alva Edison Foundation sponsored a conference held in Dayton, Ohio, called "Cooperative Education and the Impending Educational Crisis" (Knowles, 1971). Wilson (1960) completed a study that provided the basis for the National Commission for Cooperative Education, which was established in 1962. This commission obtained financial support from the United

States Office of Education to establish cooperative education programs in high schools and colleges across the nation.

Under the direction of President John F. Kennedy, a panel of consultants met to review and evaluate vocational education. Their recommendations were incorporated in the Vocational Education Act of 1963, which also recognized business and office education for the first time as training areas in vocational education. The Vocational Education Amendments of 1968 gave added visibility and support to cooperative education programs.

The Commission on Nontraditional Study (1973) and the National Commission on the Reform of Secondary Education (1973) gave support to cooperative education in the 1970s. Both asserted that offering occupational experiences to secondary school students was an important aspect of the educational process that had been ignored (Humbert & Woloszyk, 1983). Subsequent educational amendments in 1976 recognized the need for cooperative education programming at the postsecondary level. The Carl Perkins Vocational Education Act of 1984 continued the recognition of cooperative education as a viable training program (Congressional Quarterly Almanac, 1984).

As demonstrated by the related literature, it has been generally assumed that cooperative education as an instructional delivery system offers benefits to students who participate. During the years from 1978 through 1981, the Michigan Education Department, Vocational-Technical Education Service, approved and funded cooperative

education programs in vocational office occupations throughout the state. Public, federal, and state support have made possible the continued growth of the cooperative education experience for young people.

Statement of the Problem

The problem of this study was to determine whether employed male and female vocational office occupations completers who had participated in cooperative education programs experienced more related employment, greater job satisfaction, and received higher wages than employed male and female office occupations completers who had not participated in cooperative education programs. An additional aspect of this study was to determine if discernible trends existed for each of the variables over the four years of this study: 1978, 1979, 1980, and 1981.

Purpose of the Study

The purpose of this study was to provide information concerning the relationship of selected variables to participation in cooperative education programs. The variables included employment in a related job nine months following completion of a secondary vocational office occupations program, satisfaction with the job held, and wage rate received. The outcome for each variable in each year studied was plotted to ascertain discernible trends over the four-year period from 1978 through 1981.

Research Questions and Hypotheses

Data provided by the follow-up of vocational office occupations program completers were used to answer the following research questions regarding cooperative education.

1. Did office occupations completers who participated in cooperative education programs and who were employed one year after completion more often have jobs related to their training than those who did not participate in cooperative education programs?

2. Did employed office occupations completers who participated in cooperative education programs indicate greater job satisfaction than those who did not participate in cooperative education programs?

3. Did employed office occupations completers who participated in cooperative education programs receive higher mean wages than completers who did not participate in cooperative education programs?

4. Was there a difference between male and female completers with respect to related employment, job satisfaction, and mean wage rates for those who had participated in cooperative education programs and those who had not?

5. Was there consistency between employed male and female completers with respect to related employment, job satisfaction, and wage rate over the four years studied? (This question does not have the cooperative education distinction.)

6. Were there discernible trends for each of these variables over the four-year period from 1978 through 1981?

The following null hypotheses were derived from the preceding research questions.

Ho 1: There is no significant difference between the number of secondary office occupations completers who are employed and have participated in cooperative education programs and those who have not.

Ho 2: There is no significant difference in the percentage of employed male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 3: There is no significant interaction between percentage of participation in cooperative education programs and gender of secondary vocational office occupations completers.

Ho 4: There is no significant difference in the percentage of secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 5: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 6: There is no significant interaction between related employment and gender of secondary vocational office education completers who have participated in cooperative education programs and those who have not.

Ho 7: There is no significant difference in the percentage of secondary vocational office occupations completers employed in unrelated jobs who have participated in cooperative education programs and those who have not.

Ho 8: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in unrelated jobs and have participated in cooperative education programs and those who have not.

Ho 9: There is no significant interaction between unrelated employment and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 10: There is no significant difference in the mean level of job satisfaction between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 11: There is no significant difference in the level of job satisfaction between male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 12: There is no significant interaction between levels of job satisfaction of secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Ho 13: There is no significant difference in mean wage rates between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 14: There is no significant difference in mean wage rates between male and female secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Ho 15: There is no significant interaction between mean wage rate and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 16: There is no consistency in the levels of related employment, job satisfaction, and mean wage rate for male and female secondary vocational office occupations completers. (This hypothesis does not include the cooperative education distinction.)

Ho 17: There are no discernible trends for related employment, job satisfaction, or mean wage rate for male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not, over the four years included in this study.

Need for the Study

As stated in the 1976 amendments to the 1963 Vocational Education Act, the federal government desires to "assist the states in operating the best possible programs of vocational education" (A

Vocational Education Legislative Reference, 1978). Because the federal government does provide assistance, those who offer programs at the state and local levels are accountable to the federal government for reporting the outcomes of these programs. Accountability refers to measuring the achievement of basic purposes of a program. Therefore, it is necessary to make judgments concerning the effectiveness of vocational education by measuring its observable outcomes. "The success of graduates, the wages they earn, the number engaged in occupations for which they are trained . . . are types of data which influence this judgment" (Brantner, 1975, p. 26).

The Michigan Education Department, Vocational-Technical Education Service annual follow-up survey data collected on vocational program completers in Michigan provided the information, used in this study, regarding employment, related employment, job satisfaction, and wage rates. These data are reported to the United States government each year, but little analysis has been done to find out in what ways the reports, over time, differ with respect to selected variables. In order to make decisions about spending and program development, it is important to evaluate what is happening to students who complete vocational programs.

It seems timely to analyze the data from the follow-up survey to examine whether participation in cooperative education programs does contribute to employment, related employment, job satisfaction, and wages received for male and female office occupations program completers.

The following paragraphs provide additional support to the need for follow-up surveys and identify specific uses for survey data within an educational framework.

Vocational education planners need accurate data to support decisions related to program effectiveness and to justify the expansion or modification of services to students. Evidence that demonstrates the outcomes of specific programs will help make those programs better able to prepare the qualified employees demanded by the work community. "The collection of data relevant to student job success is vital, and is an extremely effective means of measuring the success of one program, or the state-wide vocational system" (Scott & Chapman, 1981, p. 2).

The final report of the Business and Office and Marketing and Distributive Education Follow-Up conducted by the Kentucky Department of Education (Scott & Chapman, 1981) included (1) purposes for conducting a follow-up and (2) how data collected might be used effectively by certain groups.

The report stated that survey information can provide justification for modification of existing programs or implementation of new ones. School administrators, planning personnel, guidance counselors, teacher educators, teachers, and students can all benefit from the use of survey information. Detecting trends that may affect policy or management, curriculum planning, job placement, and advisement, as well as determining needs of the labor force, are ways that

survey data can be used by these people to assist in updating and maintaining relevant vocational training programs (Scott & Chapman, 1981).

The student, particulary, plays an important role in the follow-up design. Current students gain from knowledge about former students--practical knowledge that may influence educational alternatives and occupational directions. The student also has the opportunity later to provide input into the future role and function of the educational institution and programs offered by that institution (Wentling, 1980).

Through the use of follow-up data, there is an opportunity to promote cooperative education in vocational office occupations programs (Fry, 1983). At a time when equity is an issue, it is particularly relevant to see what has occurred for male completers in a traditionally female occupation.

Assumption

In conducting this study, the researcher made the following assumption: The student follow-up survey data collected by the Michigan Department of Education were valid and reliable.

Limitations

The study was limited to employed secondary vocational office occupations completers in Michigan who responded to the annual follow-up survey from 1978 through 1981.

Definition of Terms

The following terms, arranged in alphabetical order, are defined as they were used in this study.

Business and office occupations programs: Instructional programs included in Classification of Instructional Programs (CIP) classification 07.0601 that prepare individuals to record and transcribe communications, provide administrative support, and abstract, classify, and file information.

Completer: A student who finishes a planned sequence of courses, services, or activities designed to meet an occupational objective and that purports to teach entry-level job skills. For the years included in this study, a completer also received a high school diploma. A completer may or may not have participated in a cooperative education program (U.S. Department of Health, Education, & Welfare, 1978).

Comprehensive vocational-technical center: The concept as promoted by the Michigan State Board of Education is, an approach to providing vocational and technical education that will attempt to provide a comprehensive educational program within reach of all citizens. The center is a facility, where a vocational program is offered and open to all students in a defined area. The area vocational program serves as an extension of existing programs at the participating high schools.

Consistency: Agreement or harmony among the parts; keeping to the same principles or habits (World Book Dictionary, 1976). In this

study, consistency was defined this way, and in a statistical sense--all reasonable men would say.

Cooperative education: A technique of vocational education for persons who, through a cooperative arrangement between the school and employers, receive instruction including required academic courses and related vocational instruction by alternation of study in school with a job.

Descriptive trend analysis: Describing results and looking for differences. In this study, a descriptive trend analysis was used to describe differences for each year--that is, over time, the movement of some value becoming successively greater or successively smaller.

Discernible: Something that can be discerned; perceptible (World Book Dictionary, 1976). For the purpose of this study, discernible was defined as a successively greater or successively smaller movement of a given value in the same direction over time.

Discernible trends: Trends that are discernible, i.e., that can be seen or discerned by the progression of plotted points on a graph in a successively greater or smaller movement in the same direction over time.

Employment status: The condition of employment. For the purpose of this study, employment status referred to being employed, being employed in a related job, or being employed in an unrelated job as reported by the respondents at the time of the study.

Follow-Up survey: A survey of the experiences and status of former pupils, either to help them in further adjustment or to secure

information to help improve instruction or guidance for those still in school. In vocational education, the term refers to a research activity designed to determine what occupations are pursued by graduates and/or former students in occupational programs and the effectiveness of their preparation in relationship to job requirements. The Michigan Education Department, Vocational-Technical Education Service's annual vocational education follow-up survey was used for this study.

Interaction: Action upon or influence on each other (World Book Dictionary, 1976). For the purpose of this study, interaction was defined in its true sense--influence on each other, of being male or female and the particular variable in question.

Job satisfaction:

> Feelings or affective responses to facets of the situation which are associated with a perceived difference between what is expected as a fair and reasonable return (or, when the evaluation of future prospects is involved, what is aspired to) and what is experienced, in relation to the alternatives available in a given situation. Their relation to behavior depends upon the way in which the individual expects that form of behavior to help him achieve the goals he has accepted. (Smith, Kendal, & Hulin, 1969, p. 6)

Leaver: A student who has been enrolled in, and has attended, a program of vocational education, has left the program without completing it, and is not enrolled in another vocational program.

Nonparticipant: A completer who did not participate in a cooperative education program as part of his/her vocational office occupations training.

Participant: A completer who participated in a cooperative education program as part of his/her vocational office occupations training.

Related employment: Employment that relates to training. For the purpose of this study, related employment referred to employment in the occupational area for which the completer was trained.

Respondents: Individuals who answer questions on a survey. In this study, respondents were identified program completers, specifically in office occupations from 1978 through 1981, who answered and returned the Michigan Education Department, Vocational-Technical Education Service's annual vocational education follow-up survey,

Trend: "A general direction or tendency; drift. A straight line or other statistical curve, showing the tendency of some function to grow or decline over a period of time" (Webster's Dictionary, 1979). For the purpose of this study, a trend also referred to and was "discernible" by a successively greater or smaller movement in the same direction over time.

Vocational office occupations completers: Students who have completed an office occupations training program at a Michigan comprehensive high school or vocational-technical center.

Vocational-Technical Education Service (V-TES): The service area within the Michigan Education Department charged with the administration of vocational-technical education in Michigan.

Wage rate: The amount of pay received per hour. For this study, wage rate was the hourly amount received, as indicated by employed completers at the time of the follow-up survey.

Overview

Chapter I contained an introduction to the study, a statement of the problem, the purpose of and need for the study, research questions and hypotheses, assumptions and limitations, and definitions of key terms. In Chapter II, related literature highlighting relevant outcomes from other studies related to cooperative vocational education is reviewed. The research design and methodology are discussed in Chapter III, and results of the statistical analysis of the data collected are included in Chapter IV. Chapter V contains the findings and conclusions of this investigation and recommendations for further study.

CHAPTER II

RELATED LITERATURE

Cooperative Vocational Education

General Attributes and Benefits

From its beginnings in 1906, and particularly since its rapid growth in the 1960s and 1970s, cooperative vocational education has been documented for the benefits it can provide to students who participate, to schools that provide programs, to the business community, and to the general community as well (Wanat & Snell, 1980).

Cooperative education programs provide students with on-the-job experiences that relate to a chosen occupation and assist them in making the transition from school to work (Humbert & Woloszyk, 1983). Cooperative education offers young people an opportunity to gain skills, knowledge, attitudes, and perceptions as well as experience needed to establish a "vocational identity" (Eggleston, 1982).

Cooperative education enhances employment potential (Gess, 1979) and can contribute to improving job selection or job "fit" (Stoddard, 1978). The educational value of participation in cooperative education programs includes learning to accept responsibility, to work with adults, and for many, to experience a sense of achievement and success. Greater personal growth, social maturity, and development of desirable attitudes and skills also can take place for those who

participate in cooperative education programs (Matos-Betancourt, 1980; Tyler, 1956; Wolfsberger, 1983). Wilms (1984) reported that employers felt students who had participated in cooperative education programs most likely had better work habits and a more positive attitude (Helliwell, 1981). A study completed by Tyler (1961), under the auspices of the Thomas Alva Edison Foundation, found several advantages in cooperative education programs. Those advantages are:

> (1) Theory and practice are more closely related; (2) student motivation toward studies is stronger; (3) there is a greater development of human relations skills; (4) there is better orientation to the world of work; (5) students are better motivated for graduate studies; (6) greater maturity, responsibility, and independence are developed; and (7) better contacts are made for later occupational placement. Also listed were certain advantages to employers. (Tyler, 1961; in Lupton, 1969, p. ix)

That participation in cooperative education programs makes a strong contribution to the individual student's career development has been supported by findings from several studies. Wilson and Lyons (1961) showed that 88% of the cooperative education students they studied said their work experience had clarified educational and career goals (Cross, 1973). Osun (1980), who studied cooperative education programs in southern Illinois high schools, reported that cooperative education "helps assimilate youths into the mainstream of adult society, . . . orient students to the world of work and provide career exploration" (p. 3549A). Cooperative education provides students the opportunity to investigate career choices and job options (Willis, 1981), as well as to gain exposure to a variety of social classes and age groups (Dawson, 1980). Students who participate in cooperative education programs have a chance to "experience, first-hand, the

consequences of tardiness and absenteeism, the benefits of good working relationships among employees, the need for communication between departments and the experience of receiving a professional work evaluation" (Poole, 1985, p. 9).

Cooperative education programs offer the following major advantages to today's student:

1. Coordination of work and study increases student motivation.
2. Theory and practice are more closely integrated, and the student finds greater meaning in his/her studies.
3. The student in cooperative education develops greater skills in human relations.
4. Work experience contributes to a greater sense of responsibility.
5. Cooperative education helps to orient the student to the world of work.
6. The student's earnings contribute to financing his/her own education.
7. The student usually experiences a smooth transition into full-time employment because of the undergraduate experience. (Dewar, 1981, p. 150)

Cooperative education programs provide a bridge between in-school training and the world of work (Dewar, 1981).

Cross (1973) reviewed literature concerning ways to measure the effect of participation in cooperative education programs on the intellectual development of students. She noted that Wilson and Lyons (1961) and Gore (1972) found that students who had participated in cooperative education programs had better scores on the Graduate Record Examination. Cross also indicated that Yencso (1971) found cooperative education alumni had higher grades than noncooperative education alumni. Some researchers have speculated that better students are attracted to cooperative education programs; others have reported mixed

results. Adams and Stephens (1970), also cited by Cross (1973), indicated that students who are working organize their study time better and therefore obtain higher grades. Smith (1971) reported that participation in cooperative education programs had a significant influence on academic performance, particularly in the senior year.

> Cooperative education experiences contribute to the developing sense of identity and sense of worth of the student, because for perhaps the first time in his life he relates to adults as an adult and because he learns important lessons about relating to other persons from many different backgrounds; that he typically achieves better in his academic program because--among other reasons--he changes his attitudes toward himself; organizes his time and work better, and as a result of meeting work obligations finds greater relevancy and hence greater motivation for his studies; is able periodically to have a change of pace from the lockstep of academic pursuits; and worries less about finances. . . . Cooperative education makes a strong contribution to growth of the individual student in his personal development, his social development, and his career development. (Wilson, 1971, p. 5)

Not all research findings have shown positive outcomes for participants of cooperative education programs. Participation in cooperative education is not related to self-esteem nor directly to career maturity was the finding of Weinberg (1983), who compared community college participants in cooperative education programs to nonparticipants. Mulcahy (1982) reported that community college participants said they got little out of their cooperative education programs but suggested the design of the program may have been at least partially responsible for this outcome. Willett (1981) used a pretest-posttest evaluation over a three-month period. He reported no significant differences between a control group and students who had participated in cooperative education programs. Willett's effort was to examine the effect experience-based programs might have in providing

secondary career and vocational education students with opportunities "that assist in acquiring and developing vocational maturity desirable for effectively entering and succeeding in the world of work" (p. xii). In some cases, the transition from school to work was not significantly eased by participation in cooperative education programs (Herrnstadt, Erwin, Morris, & Sum, 1979).

In a national assessment of cooperative vocational programs, Lloyd (1981) reported that students, as a result of the cooperative vocational experience,

a. are much better prepared to make an occupational decision.
b. appreciate school much more than before becoming a part of the cooperative program.
c. believe that they will find full-time employment in the same area where present training is taking place. (p. 7)

Frankel (1973) reported that cooperative education programs provide valuable job training, training that might not otherwise be available. Schools as well as students can benefit from cooperative education programs because of the variety of educational opportunities such programs allow them to offer their students. Schools benefit from contact with individuals who might serve as advisory committee members or provide trade journals and other materials and equipment for use in the classroom. When members of the business community share their concerns with the schools, the schools have a better opportunity to keep current and modify their curricula to meet those concerns (Wanat & Snell, 1980).

Employers feel they are getting their money's worth from cooperative education participants and that they are contributing to

the students' occupational education. Additional advantages cooperative education can provide the employer include communication with the schools, reduced recruiting costs, shortened orientation time, reduction in employee turnover, and good public relations (Lewis, 1976).

Frankel (1973) reported characteristics he thought would most likely be a part of a cooperative education program:

1. an advisory committee
2. job-related instruction in school
3. jobs that provide formal on-the-job training
4. occupational-decision assistance
5. jobs that fit into student career plans
6. jobs that have a high level of responsibility
7. jobs that afford a high degree of satisfaction
8. job-placement services
9. a high rate of job-related placements
10. a follow-up program for its graduates

Such characteristics and benefits as these, and others summarized in this review of literature, help students move more easily and quickly from school to a full-time work environment (Sanders, 1967)--a work environment that is changing. In his book Megatrends, Naisbett (1982) wrote that one of the emerging developments is the need for lifelong education and training for people and to train them to work in the new information-oriented society. Cooperative education, with its format of alternating classroom study and work placements, is ideal to help prepare individuals for a working environment that likely

will require periodic work-related training and retraining. "By placing students in a broader range of work experiences, including assignments with information-oriented companies, . . . cooperative education programs can offer a meaningful response to several of the emerging needs of our nations", according to Naisbett (quoted in Lendo, 1984, p. 100).

Cooperative Employment-Related Employment

Two of the factors frequently studied in research about cooperative education are whether the participants of cooperative education are employed and whether the employment relates to the training participants received while in school. As stated in the preceding section of this chapter, much of the research has supported the idea that the transition from school to work is enhanced or eased by participation in cooperative education programs. Participants often remain in, or are employed by, the company that provided the cooperative education experience. In some areas this has contributed to related job-placement rates of 80% or more (Evans & Herr, 1978).

The findings of Slick and Welch (1974) and those of Lewis (1976) showed that graduates of vocational cooperative education programs had a much lower unemployment rate than the national average of all high school graduates. Welch (1980) found that related placement among cooperative education students was almost twice that for all vocational graduates in his study. Participation in cooperative education programs reportedly has had a greater effect on

employment than other factors (Freeman, 1978). It has "contributed to occupational acquisition, maintenance, and mobility" for many students (Chiti, 1980, p. 4690).

When cooperative education participants are compared to nonparticipants, participants more often are employed and a greater percentage have jobs related to their training. Kingston (1970) reported that office-occupations cooperative education participants found jobs more quickly and that their job titles were significantly different from those of nonparticipants. Hamlin (1978) found that those who had participated in cooperative education programs gained more promotions and were granted increased responsibility earlier than nonparticipants. Laney (1981) found that graduates who had participated in cooperative education programs were in a better position to achieve their occupational goals than were their counterparts who had not participated in such programs.

A study to determine whether cooperative education programs were more effective in teaching clerical skills showed that cooperative education participants achieved a much higher percentage of employment and a higher rate of related employment, i.e., jobs in clerical and office positions, than did nonparticipants (Anderson, 1973).

Brockman (1972) followed up cooperative education participants 26 to 40 years after graduation and found that approximately 60% were working in the fields for which they had been trained. Haines (1967) found that 50% of the cooperative education participants he studied were employed in related jobs ten months after graduation. Similar

outcomes were reported by Freeman (1978), who studied women in industrial cooperative education programs. Tuttle (1965), who investigated trades and industrial cooperative education training programs, found that 60% of the program graduates held related jobs. Workman (1969) found that 73% of the industrial cooperative training program participants at James Wood High School in Blacksburg, Virginia, were employed in related jobs three to six years after graduation.

The Vocational-Technical Division of the Minnesota Department of Education conducted an eight-year (1970-1979) follow-up of full-time day programs of Minnesota Area Vocational-Technical Institutes for the purpose of identifying trends (Murphy, 1980). This study showed that, over the eight-year period, there was a steady increase of 17% (from 74% to 91%) in the number of students employed in training-related jobs one year after graduation. Murphy also reported that an increasing number of female students were participating in a broad spectrum of vocational programs.

Meyer, Crawford, and Klaurens (1975) summarized and supported the preceding findings in their statement, "Research shows that cooperative vocational education program graduates have the lowest youth unemployment rate" (p. 13).

Job Satisfaction

Extensive research has been conducted on job satisfaction. The methods used to measure satisfaction are also numerous. This review of literature related to job satisfaction includes appropriate definitions and the results of investigations undertaken to determine

job satisfaction related to participation in cooperative education programs.

Job satisfaction was defined in the definition of terms for the present research as follows:

> Feelings or affective responses to facets of the situation which are associated with a perceived difference between what is expected as a fair and reasonable return (or, when the evaluation of future prospects is involved, what is aspired to) and what is experienced, in relation to the alternatives available in a given situation. Their relation to behavior depends upon the way in which the individual expects that form of behavior to help him achieve the goals he has accepted. (Smith et al., 1969, p. 6)

Another definition portrayed job satisfaction as "a function of the perceived characteristics of a job in relation to an individual's frame of reference" (House & Wigdor, 1976; quoted in Belmont, 1978, p. 33). Hoppock (1935) viewed job satisfaction as "any combination of physiological, psychological, and environmental circumstances that causes a person truthfully to say, 'I am satisfied with my job'" (p. 21). Job satisfaction has often been defined in terms of needs. It may result from the "fit between individual needs and the job and its environment," an individual's response to the workplace (Hopkins, 1983, p. 22). As previously stated, the fit between individual and job is critical and contributes significantly to feelings of job satisfaction. Rowe (1972) conducted an evaluation of work experience in terms of motivation and job satisfaction based on Maslow's hierarchy of needs. Rowe compared coordinators' expectations to students' responses and concluded that coordinators may not pay enough attention to the

ability of a particular job to satisfy these needs and that sometimes they fail to "see the jobs as students see them" (p. 14).

The studies reviewed next will assist in demonstrating the important contribution cooperative education programs can make to job fit and satisfaction. Middleton (1975) found that 84% of the cooperative education program participants from five secondary schools in Vancouver, Canada, expressed satisfaction with their jobs. The 1978-79 senior students at Bayonne High School in New Jersey who had participated in cooperative vocational education programs, exhibited an overall more positive work attitude compared to nonparticipant academic students (Helliwell, 1981). Epting (1980) found no significant difference between job-satisfaction levels of engineering graduates who had participated in cooperative education programs and those who had not participated in such programs. Webber (1981), who hypothesized that students with related training would score higher on the Minnesota Satisfaction Questionnaire and on the Minnesota Satisfactoriness Scale, found no significant difference in the relationship between locus of control and job satisfaction for high school cooperative vocational education students.

Bryant (1981) conducted a longitudinal study of high school students. He did not identify cooperative education but attempted to determine factors relating to job satisfaction. One of the few variables that had a significant rating was relationship of part-time work to future work. Participants in cooperative education programs

were more content with their jobs in at least the first several years after high school, according to Stormsdorfer (1973).

Frankel (1973) found that the level of job satisfaction was greater in rural areas and that job satisfaction was greater if the employer rating was good and the student was given responsibility on the job. Cooperative education students understood the nature of work and the working environment better than did academic students, according to an article by Helliwell (1981). His research findings suggested that cooperative education students attached more importance to actual work itself and derived job satisfaction through recognition, responsibility, and achievement on the job rather than from the working environment. The more intrinsic the work-value orientation, the greater the level of job satisfaction. Herrnstadt et al. (1979), who studied cooperative education and the transition from school to work, found no significant difference in job satisfaction between those who participated in cooperative education programs and those who did not. They did find, however, that participants tended to value the jobs held in high school more, and were more satisfied when they were employed in jobs related to high school training. Slick and Welch (1974) reported that graduates with a cooperative education background found related jobs more often and had a greater degree of job satisfaction than their counterparts without such a background.

Job satisfaction, according to Lewis (1976), is a multidimensional concept. Cooperative education students may "place a different value on the various components that overall satisfaction comprises;

thus comparable measures may occur in the face of different job conditions" (p. 87).

Wages

Breen and Freeman (1978) studied industrial cooperative education outcomes at Macomb County Community College in Michigan. They found that a greater percentage of cooperative education participants graduated, and 65% of the cooperative education participants had full-time related jobs, but nonparticipant respondents reported higher wages. Employers perceived those with cooperative education experience as more efficient and quicker to learn. Hamlin (1978) found that business-division cooperative education students got wage increases earlier than students in other subject areas and usually earned higher initial annual salaries. Seventy percent of business education students surveyed were employed in related jobs six months after graduation, and students in related occupations earned slightly higher salaries than those in unrelated jobs. The difference diminished over time, and wages rose for business education respondents.

Kingston (1970) found that cooperative education students in office occupations received higher earnings. This was not evidenced by beginning salary but by wage increases received by beginning workers. Brailsford (1982) reported that cooperative education participants received wage increases more quickly than nonparticipants. Molnar (1975) also found cooperative education participants received more rapid wage increases. Slick (1974) reported that cooperative education participants received higher weekly wages. Lewis and Hamlin (1978)

found no wage advantage as a result of participation in cooperative education programs. Cross (1973) summarized the findings of Fager (1969), Gore (1972), Wilson-Lyons (1961), and Yencso (1971). Neither Wilson-Lyons nor Yencso found significant differences between cooperative education participants and nonparticipants in terms of first job salary. Fager and Gore, however, did report salary advantages, and over long periods of time, i.e., three and five years after graduation, cooperative education participants were ahead of others in both salary and position. Cross concluded that the advantages of cooperative education for students regarding wage and position appeared to be substantial and significant.

Gender

Gender, an independent variable for this study, was analyzed in relation to the dependent variables of related/unrelated employment, job satisfaction, and wages. This section includes a review of findings of studies that have identified different outcomes for male and female cooperative education participants.

Frankel (1973) reported that some gender segregation may take place in job placement at the secondary level with specific employers. Lewis (1976) examined job satisfaction of male and female graduates who had participated in cooperative education programs and found there was no significant difference for male participants. Female participants, however, indicated slightly more satisfaction with their jobs. Breglio (1976) found that there were not many differences, but male

participants' job satisfaction was slightly less than females; this difference, however, was not significant. Female graduates who participated in cooperative education programs are paid more than their nonparticipant counterparts (Frankel, 1973) and, in office occupations, have more related jobs (Lewis, 1976).

In a longitudinal study conducted by Breglio (1976), male cooperative education graduates reported having jobs more frequently than did female graduates. Male students also earned more than female students, and married persons earned more than single individuals. A significant portion of women who participated in cooperative education at Northeastern University in Boston, Massachusetts, reportedly married later, had children later, pursued careers for longer periods of time before starting a family, and were employed ten years after graduation in more nontraditional jobs than noncooperative education alumnae (Brown, 1976).

Cooperative education has special value for minority groups, both ethnic and women. McKinney (1971) and Van Sickle (1970), as reported in Cross (1973), asserted that cooperative education is a way to broaden contacts and to enlarge the vision of disadvantaged students. It is also an opportunity to give employers a chance to see these people in jobs they had not envisioned such persons having or in jobs that had previously been closed to the disadvantaged. Cooperative education enhances gender equality in enrollment in most program areas (Frazier, 1981). Brown (1976) studied female college graduates of cooperative and noncooperative programs and concluded that cooperative

education had a positive effect on the women's career development. Rowe (1980) endeavored to determine whether cooperative education programs were more beneficial to women than to men; no evidence was found to support this theory. However, having participated in cooperative education programs brought the women's beginning salaries closer to those of male graduates who had not participated in cooperative education.

Summary

Much research has been done to determine the results of cooperative education programs at the secondary and postsecondary levels. Also, a number of studies have been completed in the area of business and office occupations. However, studies of specific areas appear to have been conducted more frequently at postsecondary institutions.

As the literature shows, data gained through follow-up surveys can provide information critical to improving the services that schools provide. The support and enthusiasm for continued appraisal help make room for an analysis of follow-up data collected on completer participants and nonparticipants of cooperative education programs as a part of the vocational office occupations identification.

CHAPTER III

RESEARCH PROCEDURES

Introduction

The purpose of this study was to demonstrate the relationship of selected variables of related employment, job satisfaction, and wage rate for male and female completers of vocational office occupations training to participation in cooperative education programs. The follow-up survey developed by the Michigan Education Department, Vocational-Technical Education Service, provided information on individual office occupations program completers during the school years 1978 through 1981. That follow-up survey was the primary source of data for the present study (see Appendix A).

Instrument Design

The annual Michigan Education Department survey and the survey process itself were established in 1973 by the Michigan Education Department, Vocational-Technical Education Service. The survey was sent to all program completers and leavers who had completed more than 50% of a program and had left high school.

Program completers from every vocational education program were identified on Vocational-Technical Education Service enrollment reports, which were completed by local educational agencies in July of

each year. On the survey for each year from 1978 through 1981, a space was provided for the school district to indicate whether or not the respondent had participated in a cooperative education program as a part of his/her vocational training program.

Survey Procedures

The follow-up surveys conducted from 1978 through 1981 were initiated to gather data about all approved vocational education programs operated by local educational agencies within Michigan. The follow-up survey instrument was based on information to meet federal requirements and state department needs.

The follow-up surveys were administered to completers of vocational education programs approximately nine months after high school graduation. The Michigan Education Department, Vocational-Technical Education Service, distributed instructions and survey forms in February of each year. Each survey form was coded by a six-digit United States Department of Education vocational program code and was identified by name and program serial number. Local school districts provided the public relations effort required to achieve a high response rate. A cover letter explained the purpose and uses of the follow-up survey. The cover letter was sent to each program completer. The follow-up surveys were completed during March and April of each year and returned to local educational agencies.

Nonrespondents to the survey were identified, and subsequent follow-up letters and additional forms were sent to them. Local school district staff than compiled local survey results. The local survey

results indicated the total number of program completers surveyed and the number of surveys returned. The results were then forwarded to the Genessee Intermediate School District for keypunching. After keypunching, the follow-up data were forwarded to the Michigan Education Department, Vocational-Technical Education Service, in May of each year. The Michigan Education Department was, in turn, required to transmit the data to the United States Department of Education.

The data for this study were obtained through special permission from the Michigan Education Department's computer center.

Population

The population for this study included completers of vocational education office occupations programs located in comprehensive high schools and area vocational centers throughout Michigan. Included were completers who responded to the Michigan Education Department, Vocational-Technical Education Service's annual follow-up survey during the years 1978 through 1981. Occupational program area descriptors in this population included:

14.1703	Stenographer
14.0797	Medical Secretary
14.0798	Legal Secretary
14.0901	Clerk Typist
14.9700	Clerical Lab
14.9800	Steno/Clerical Lab

These descriptors have now been classified as Office Occupations under the 07.0601 CIP classification.[1]

The data gathered for this study included the 1979 follow-up of 1978 completers, the 1980 follow-up of 1979 completers, the 1981 follow-up of 1980 completers, and the 1982 follow-up of 1981 completers. The response rate for the survey in vocational office occupations areas was reported by the Michigan Education Department, Vocational-Technical Education Service, to be in the high 70% to low 80% range for both 1978 and 1979. In 1980, the survey return was 80%, and in 1981, 81.3% of the office occupations completers responded to the survey.

Research Design

The independent variables for this study were participation in cooperative education programs and gender of the respondent. The dependent variables were related and unrelated employment, job satisfaction, and wage rate.

The Statistical Package for the Social Sciences was used to perform three types of analyses that tested the hypotheses to provide answers for the research questions. The chi-square statistic was selected (1) to examine the percentage difference between employed completers who had participated in cooperative education programs and those who had not, (2) to examine the percentage difference between male and female employed completers who had participated in cooperative

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[1]The CIP classification went into effect throughout the United States in September 1982 for all programs receiving funds under PL 94-482, the Vocational Education Amendments of 1976.

education programs and those who had not, and (3) to examine the percentage difference between male and female completers employed in related or unrelated jobs.

The t-test statistical procedure was selected (1) to evaluate the differences in mean level of job satisfaction for employed male and female completers who had participated in cooperative education programs and those who had not and (2) to evaluate the differences in mean wage rate for employed male and female completers who had participated in cooperative education programs and those who had not. Analysis of variance was selected to assess the interaction of gender (i.e., being male or female) and cooperative education with dependent variables of related or unrelated employment, job satisfaction, and wage rate. Each of the three statistical analyses was completed for each of the four years included in the study.

Hypotheses

The null hypotheses tested in this research were derived from the research questions presented in Chapter I. The analyses of these null hypotheses are explained in Chapter IV.

Ho 1: There is no significant difference between the number of secondary office occupations completers who are employed and have participated in cooperative education programs and those who have not.

Ho 2: There is no significant difference in the percentage of employed male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 3: There is no significant interaction between percentage of participation in cooperative education programs and gender of secondary vocational office occupations completers.

Ho 4: There is no significant difference in the percentage of secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 5: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 6: There is no significant interaction between related employment and gender of secondary vocational office education completers who have participated in cooperative education programs and those who have not.

Ho 7: There is no significant difference in the percentage of secondary vocational office occupations completers employed in unrelated jobs who have participated in cooperative education programs and those who have not.

Ho 8: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in unrelated jobs and have participated in cooperative education programs and those who have not.

Ho 9: There is no significant interaction between unrelated employment and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 10: There is no significant difference in the mean level of job satisfaction between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 11: There is no significant difference in the level of job satisfaction between male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 12: There is no significant interaction between levels of job satisfaction of secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Ho 13: There is no significant difference in mean wage rates between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 14: There is no significant difference in mean wage rates between male and female secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Ho 15: There is no significant interaction between mean wage rate and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 16: There is no consistency in the levels of related employment, job satisfaction, and mean wage rate for male and female secondary vocational office occupations completers. (This hypothesis does not include the cooperative education distinction.)

Ho 17: There are no discernible trends for related employment, job satisfaction, or mean wage rate for male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not, over the four years included in this study.

Analysis and Presentation of Data

In testing the hypotheses, inferential and descriptive statistical procedures were used. Inferential analyses were performed using the $p < .05$ alpha level. Specifically, Hypotheses 1 through 9 were tested using a chi-square statistic. Hypotheses 10 through 15 were analyzed using a two-way analysis of variance. The independent variables for these hypotheses were gender of student and participation or nonparticipation in a cooperative education component of a vocational office occupations program. The dependent variable for Hypotheses 10 through 12 was level of job satisfaction. The dependent variable for Hypotheses 13 through 15 was average hourly wage. Hypothesis 16 was

analyzed by examining the consistency of related employment, job satisfaction, and wages between male and female completers. Consistency was illustrated through the use of line graphs. Participation in cooperative education was not a variable of this analysis. Hypothesis 17 was analyzed using a descriptive trend analysis. Trends were discerned through the use of line graphs illustrating the movement of the variables over the four years studied.

This research study dealt with selected questions on the follow-up survey for each of the years studied (see Appendix A). The first item of information used was the indication of whether or not the completers had participated in a cooperative education component of their vocational office occupations programs. This information was provided by the school district and did not appear as a question on the survey form. The remainder of the data for this study came from completers' responses to the following survey questions:

. Employed

Are you working for pay? ___Yes ___No

About how many HOURS PER WEEK do you work? _____

. Related/Unrelated Employment

On your present job, how much do you use the vocational training you received in your high school or area vocational education center? (Check ONLY ONE)

____A lot ____Hardly any
____Some ____None

. Job Satisfaction

Answer ONLY if you are working for pay. Overall, how satisfied are you with your present job? (Check ONLY ONE)

____Very Satisfied
____Somewhat Satisfied
____Not Very Satisfied
____Not At All Satisfied

. Wages

On my present job I am paid about $_____ per hour.

. Sex

What is your sex? ___Male ___Female

Statistics for each dependent variable were plotted on a graph to determine consistency over the four years studied. Percentages were plotted on graphs to illustrate trends found through the statistical analyses.

Summary

This investigation was a descriptive analysis that examined selected variables of being employed, having related employment, job satisfaction, and rate of pay for male and female secondary vocational office occupations program completers in Michigan. The Michigan Education Department, Vocational-Technical Education Service's annual follow-up survey served as the basis for the data. To test the 17 hypotheses posed, the chi-square statistic, t-test, and analysis of variance were used. Significance was rated at the $p < .05$ alpha level.

The findings of the data analyses are discussed in Chapter IV. Conclusions and recommendations for further research may be found in Chapter V.

CHAPTER IV

FINDINGS

Introduction

This chapter contains the results of an analysis of the data collected to examine the relationship of participation in cooperative education programs to related employment, job satisfaction, and wages for employed male and female completers of vocational office occupations training programs. The analysis covered a four-year period from 1978 through 1981.

The number of respondents may not be the same for each variable because some respondents did not complete all applicable questions on the survey. The chi-square statistic was chosen to determine the significance of participation or nonparticipation in cooperative education programs for the selected variables. A chi-square test value equal to or greater than 3.84 was the value used to indicate significance at an alpha level of $p < .05$.

The research questions are presented first, indicating which null hypotheses were derived from which question. The research questions are answered with corresponding hypotheses in Chapter V. The results of hypothesis testing are reported below with descriptions and tables to illustrate the findings.

1. Did office occupations completers who participated in cooperative education programs and who were employed one year after completion more often have jobs related to their training than those who did not participate in cooperative education programs?

Hypotheses 1, 2, 4, 5, 7, and 8 were derived from this research question.

2. Did employed office occupations completers who participated in cooperative education programs indicate greater job satisfaction than those who did not participate in cooperative education programs?

Hypotheses 10 and 11 were derived from this research question.

3. Did employed office occupations completers who participated in cooperative education programs receive higher mean wages than completers who did not participate in cooperative education programs?

Hypotheses 13 and 14 were derived from this research question.

4. Was there a difference between male and female completers with respect to participation in cooperative education programs, related employment, job satisfaction, and mean wage rates for those who had participated in cooperative education programs and those who had not?

Hypotheses 3, 6, 9, 12, and 15 were derived from this research question.

5. Was there consistency between employed male and female completers with respect to related employment, job satisfaction, and wage rate over the four years studied? (This question does not have the cooperative education distinction.)

Hypothesis 16 was derived from this research question.

6. Were there discernible trends for each of these variables over the four-year period from 1978 through 1981?

Hypothesis 17 was derived from this research question.

Results of Hypothesis Testing

Employment Status of Respondents Nine Months After Completion of Vocational Office Occupations Training Programs

Respondents were considered to be employed if they answered the survey questions regarding wages and number of hours worked. Table 4.1 shows the number and percentage of respondents who were employed nine months after completing vocational office occupations training programs for 1978, 1979, 1980, and 1981. Approximately 56% were employed for 1978, 55% for 1979, 50% for 1980, and 48% for 1981.

Table 4.1.--Employment status of respondents nine months after completion of vocational office occupations training programs.

Year	Number of Respondents Employed	%	Number of Respondents Not Employed	%	Total
1981	4,343	47.9	4,717	52.1	9,060
1980	4,136	50.2	4,099	49.8	8,235
1979	5,926	55.1	4,838	44.9	10,764
1978	5,200	55.5	4,162	44.5	8,362

Employed Completer Participants and Nonparticipants of Cooperative Education Programs

Ho 1: There is no significant difference between the number of secondary office occupations completers who are employed and have participated in cooperative education programs and those who have not.

Table 4.2 contains the data used in testing Hypothesis 1. As shown in the table, there were 4,970 employed respondents in 1978. Of these, 2,667 or 53.7% had participated in cooperative education programs, and 2,303 or 46.3% had not participated in such programs. The chi-square analysis indicated that there was a significant difference between participants and nonparticipants in cooperative education programs. The null hypothesis was rejected for 1978.

Table 4.2.--Number and percentage of employed completer participants and nonparticipants of cooperative education programs, by year.

Year	Total N	Participants		Nonparticipants		n Difference	Chi-Square Value
		Number	%	Number	%		
1981	4,336	1,880	43.4	2,456	56.6	-666	76.52*
1980	4,048	1,969	48.6	2,079	51.4	-110	2.09
1979	5,723	2,637	46.1	3,086	53.9	-449	35.23*
1978	4,970	2,667	53.7	2,303	46.3	-364	26.66*

*Significant at $p < .05$.

There were 5,723 respondents who were employed in 1979. Of these, 2,637 or 46.1% had participated in cooperative education programs as part of their vocational office occupations training, and

3,086 or 53.9% had not participated in such a program. By the chi-square analysis, the null hypothesis was rejected.

In 1980 there were 4,048 employed respondents. Of these, 1,969 or 48.6% had participated in cooperative education programs, and 2,079 or 51.4% had not participated in such programs. The chi-square analysis demonstrated that there was no apparent relationship between being employed and participation in cooperative education programs. The null hypothesis was not rejected for 1980.

The 1981 respondents consisted of 4,336 employed completers. There were 1,880 or 43.4% who had participated in cooperative education programs, and 2,456 or 56.6% who had not participated in such programs. The hypothesis was rejected, as the chi-square test showed that there was a significant relationship.

To summarize, there were more cooperative education program participants than nonparticipants in 1978. There were fewer cooperative education program participants than nonparticipants in 1979, 1980, and 1981. There was a significant relationship between employment and participation in cooperative education programs for 1978, 1979, and 1981. There was no significant relationship in 1980.

Employed Male and Female Completer Participants and Nonparticipants of Cooperative Education Programs

Ho 2: There is no significant difference in the percentage of employed male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.3 displays the data used in testing Hypothesis 2. There were 109 employed male and 4,822 employed female respondents in 1978. Seventy or 64.2% of the employed male respondents had participated in cooperative education programs, and 39 or 35.8% had not participated in such programs. The chi-square analysis demonstrated a significant difference between male participants and nonparticipants. Therefore, the null hypothesis was rejected.

The same year, 2,581 or 53.5% of the employed female respondents had participated in cooperative education programs, and 2,241 or 45.5% had not participated in such programs as part of their vocational office occupations training. The chi-square analysis resulted in a significant difference. Therefore, the null hypothesis was rejected.

The 1979 data showed that 62 or 53.9% of the employed male respondents had participated in cooperative education programs, and 53 or 46.1% had not participated in such programs. The chi-square analysis indicated that there was no significant difference between male participants and nonparticipants for 1979. Thus the null hypothesis was not rejected.

For employed female respondents in 1979, 2,544 or 45.8% had participated in cooperative education programs, and 3,006 or 54.2% had not completed such programs. The chi-square analysis revealed that the hypothesis could not be rejected.

In 1980, there were 80 employed male and 3,955 employed female respondents. Forty-one or 51.3% were employed male completers who had participated in cooperative education programs. Thirty-nine or 48.8%

Table 4.3.--Number and percentage of employed male and female completer participants and nonparticipants of cooperative education programs, by year.

Year	Males							Females							Interaction Chi-Square Value
	Total n	Participants n	Participants %	Nonparticipants n	Nonparticipants %	n Diff.	Chi-Square Value	Total n	Participants n	Participants %	Nonparticipants n	Nonparticipants %	n Diff.	Chi-Square Value	
1981	116	47	40.5	69	59.5	-22	4.17*	4,204	1,829	43.5	2,375	56.5	-546	70.91*	0.30*
1980	80	41	51.3	39	48.8	2	0.05	3,955	1,919	48.5	2,036	51.5	-117	3.46	0.14*
1979	115	62	53.9	53	46.1	9	0.70	5,550	2,544	45.8	3,006	54.2	-462	35.46	2.64*
1978	109	70	64.2	39	35.8	31	8.82*	4,822	2,581	53.5	2,241	46.5	350	23.77*	4.48*

*Significant at $p < .05$.

had not included cooperative education programs in their vocational office occupations training. The chi-square analysis for these data indicated that the difference between participants and nonparticipants of cooperative education was not significant. Therefore, the null hypothesis was not rejected.

The employed female completers who had participated in cooperative education programs in 1980 numbered 1,919 or 48.5%, and the nonparticipants numbered 2,036 or 51.5%. Results of the chi-square analysis demonstrated that there was no significant difference between the two groups. Therefore, the hypothesis was not rejected for 1980.

The survey data for 1981 revealed that of a total of 116 employed male respondents, 47 or 40.5% had participated in cooperative education programs, and 69 or 59.5% had not participated in such programs. The chi-square analysis indicated that the difference was significant. Hence the null hypothesis was rejected for 1981.

Employed female respondents in the same year totaled 4,204. Of these, 1,829 or 43.5% had participated in cooperative education programs, and 2,375 or 56.5% had not participated in such programs as part of their vocational office occupations training. The chi-square analysis for these completers indicated that the hypothesis must be rejected for 1981 as a significant relationship was demonstrated.

In summary, the percentage of male participants was greater than that of nonparticipants in cooperative education programs for 1978, 1979, and 1980. The difference was significant for 1978 and 1981. The percentage of female respondents who had participated in cooperative

education programs was significantly greater than the percentage of nonparticipants in 1978. A lower percentage of female respondents had participated in cooperative education programs in 1979, 1980, and 1981. The difference was significant for 1979 and 1981. No significant difference was demonstrated for 1980.

Ho 3: There is no significant interaction between percentage of participation in cooperative education programs and gender of secondary vocational office occupations completers.

In 1978, a significant difference, demonstrated by the chi-square analysis, existed between the percentage of male and the percentage of female completers who had participated in cooperative education programs. The level of interaction, or the predictability of participation in cooperative education programs by gender of the completer, was not significant for 1979, 1980, or 1981, as the chi-square values were below the designated level for significance. The null hypothesis could not be rejected for these years because no relationship between gender of the respondent and participation or nonparticipation in cooperative education programs was demonstrated.

Male and Female Completer Participants of Cooperative Education Programs Employed in Related Jobs

Ho 4: There is no significant difference in the percentage of secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Table 4.4 displays the data used in testing Hypothesis 4. On the survey form, respondents were asked to indicate whether they were employed in related or unrelated jobs by referring to the frequency

with which they used the vocational office occupations training they received. Choices on the survey were: A Lot, Some, Hardly Any, or None. If respondents indicated A Lot or Some, they were recorded as having related employment. If they indicated Hardly Any or None, they were recorded as having unrelated employment (see Appendix A).

Table 4.4.--Number and percentage of completer participants and nonparticipants of cooperative education programs employed in related jobs, by year.

Year	Total N	Participants		Nonparticipants		n Difference	Chi-Square Value
		Number	%	Number	%		
1981	2,833	1,431	50.5	1,402	49.5	29	0.30
1980	2,743	1,506	54.9	1,237	45.1	269	26.38*
1979	4,182	2,076	49.6	2,106	50.4	-30	0.22
1978	3,608	2,064	57.2	1,544	42.8	520	74.94*

*Significant at $p < .05$.

The 1978 respondents consisted of 3,608 completers, of whom 2,064 or 57.2% had participated in cooperative education programs and were employed in related jobs. There were 1,544 or 42.8% of those employed in related jobs who had not participated in cooperative education programs. The chi-square value for these data indicated that there was an apparent relationship between related job placement and participation in cooperative education programs. Therefore, the null hypothesis was rejected.

For 1979, 4,182 completers responded to the survey question concerning related employment. Of these, 2,076 or 49.6% held related jobs and had participated in cooperative education programs as part of their office occupations training. There were 2,106 or 50.4% who had not participated in cooperative education programs but held related jobs. The chi-square analysis of these data indicated that the hypothesis could not be rejected. No apparent relationship was demonstrated between participation in cooperative education programs and related employment for 1979.

There were 2,743 completers who responded to the related employment question in 1980. Of those, 1,506 or 54.9% had participated in cooperative education programs, and 1,237 or 45.1% had not. The chi-square analysis indicated there was a significant relationship between related employment and participation in cooperative education programs. As a result, the null hypothesis was rejected.

For 1981, there were 2,833 respondents, of whom 1,431 or 50.5% were employed in related jobs and had participated in cooperative education programs. In contrast, 1,402 or 49.5% of those in related jobs had not participated in cooperative education programs. The chi-square analysis of these data indicated there was no significant difference for 1981 completers. The null hypothesis was not rejected as no apparent relationship was demonstrated between having participated in cooperative education programs and related employment.

In 1978, 1980, and 1981 a greater percentage of those employed in related occupations had also participated in cooperative education

programs as part of their office occupations training. In 1979, a greater percentage of completers who had not participated in cooperative education program held related jobs. The significant differences seemed to occur in alternate years, which resulted in the rejection of the null hypothesis for 1978 and 1980. Even though a greater percentage of respondents participated in cooperative education programs in 1981, there was no significant difference. The null hypothesis was not rejected for 1979 and 1981.

Ho 5: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Table 4.5 contains the data used in testing Hypothesis 5. For 1978, there were 53 male respondents. Of these, 36 or 67.9% had participated in cooperative education programs. Seventeen or 32.1% of the male respondents employed in related jobs had not participated in cooperative education programs. The chi-square analysis for these completers showed that for male respondents there was an apparent relationship between related employment and participation in cooperative education programs. Therefore, the null hypothesis was rejected.

For the same year, 3,531 female completers employed in related jobs responded to the survey. Of these, 2,017 or 57.1% had participated in cooperative education programs, and 1,514 or 42.9% had not participated in such programs. The chi-square analysis for these female respondents indicated that there was an apparent relationship

Table 4.5.--Number and percentage of male and female completer participants and nonparticipants of cooperative education programs employed in related jobs, by year.

Year	Males							Females							Interaction Chi-Square Value
	Total n	Participants n	%	Nonparticipants n	%	n Diff.	Chi-Square Value	Total n	Participants n	%	Nonparticipants n	%	n Diff.	Chi-Square Value	
1981	66	30	45.5	36	54.5	- 6	1.63	2,757	1,398	50.7	1,359	49 3	39	1.10	.51
1980	41	25	61.0	16	39.0	9	3.95*	2,695	1,474	54.7	1,221	45.3	253	47.50*	.41
1979	61	35	57.4	26	42.6	9	2.70	4,138	2,019	49.5	2,058	50.5	-39	.75	1.18
1978	53	36	67.9	17	32.1	19	13.62*	3,531	2,017	57.1	1,514	42.9	503	40.00*	2.06

*Significant at $p < .05$.

between related employment and participation in cooperative education programs in 1978. Therefore, the null hypothesis was rejected.

For 1979, of 61 male respondents employed in related jobs, 35 or 57.4% had participated in cooperative education programs; 26 or 42.6% had not enrolled in such programs as part of their vocational office occupations training. For male respondents in 1979, no apparent relationship was demonstrated between having related employment and participation in cooperative education programs. Therefore, the null hypothesis could not be rejected, based on the results of the chi-square analysis.

The 1979 female respondents employed in related jobs included 4,138 completers. Of that number, 2,019 or 49.5% had participated in cooperative education programs. There were 2,058 or 50.5% of the female respondents employed in related jobs who had not participated in cooperative education programs. The chi-square analysis for these data demonstrated that there was no apparent relationship between participation in cooperative education programs and having related employment. As a result, the null hypothesis could not be rejected.

The male respondents for 1980 consisted of 41 completers, 25 or 61% of whom had participated in cooperative education programs and held related jobs at the time of the survey. Sixteen male completers or 39% had not participated in cooperative education programs but held related jobs nine months after completion. The chi-square analysis for these data showed that the null hypothesis was rejected as a

significant relationship was demonstrated between participation in cooperative education programs and related employment.

The female respondents for 1980 consisted of 2,695 completers, of whom 1,474 or 54.7% had participated in cooperative education programs and held related jobs at the time of the survey. There were 1,221 or 45.3% who had not participated in cooperative education programs but held related jobs nine months after completion. The chi-square test of the data for female respondents indicated that the null hypothesis was rejected, as a significant relationship was demonstrated between participation in cooperative education programs and having related employment.

For 1981, there were 66 male respondents who were employed in related jobs. Thirty or 45.5% had participated in cooperative education programs as part of their vocational office occupations training. Thirty-six or 54.5% of the male respondents employed in related jobs had participated in cooperative education programs. The chi-square analysis for these respondents indicated that there was no significant difference between having participated in cooperative education programs or not, in terms of being employed in related jobs. Therefore, the null hypothesis was not rejected.

For the same year, there were 2,757 female respondents employed in related jobs. Of these completers, 1,398 or 50.7% had participated in cooperative education programs. Female completers who had not participated in such programs numbered 1,359 or 49.3%. The chi-square analysis showed that, for this group of female respondents, no

significant relationship existed between having participated in cooperative education programs and being employed in related jobs. Therefore, the null hypothesis could not be rejected.

In summary, significantly more male and more female respondents participated in cooperative education programs in 1978. In 1979, there were still more male participants than male nonparticipants, but there were several more female nonparticipants than there were female participants. The difference, however, was not significant for either male or female respondents in 1979. In 1980, the circumstances were similar to 1978; that is, significantly more male and more female respondents participated in cooperative education programs. In 1981, there were slightly fewer male participants and slightly more female participants than nonparticipants. The difference for neither of these was significant. Therefore, the null hypothesis was rejected for male and female respondents in 1978. It was not rejected for either males or females in 1979. The null hypothesis was rejected for both males and females in 1980 but was not rejected for either group in 1981.

Ho 6: There is no significant interaction between related employment and gender of secondary vocational office education completers who have participated in cooperative education programs and those who have not.

The purpose of Hypothesis 6 was to examine whether gender was significant with respect to participants and nonparticipants being employed in related jobs. The chi-square analysis for interaction demonstrated that the independent variable of gender was

not significant in determining related employment status of completers or in determining participation in cooperative education programs for any of the years studied. Therefore, the null hypothesis could not be rejected.

Male and Female Participants and Non-participants of Cooperative Education Programs Employed in Unrelated Jobs

Ho 7: There is no significant difference in the percentage of secondary vocational office occupations completers employed in unrelated jobs who have participated in cooperative education programs and those who have not.

Table 4.6 contains the data used in testing Hypothesis 7. Of the 1,302 office occupations completers employed in unrelated jobs at the time of the 1978 survey, 575 or 44.2% had participated in cooperative education programs. There were 727 or 55.8% who had not included cooperative education programs in their vocational office occupations training. The chi-square analysis for the 1978 respondents indicated that the difference was significant. As a result, the null hypothesis was rejected.

The 1979 respondents consisted of 1,493 completers, of whom 539 or 36.1% were employed in unrelated jobs and had participated in cooperative education programs. There were 954 or 63.9 percent employed in unrelated jobs who had not participated in cooperative education programs. The difference was significant according to the results of the chi-square analysis. Therefore, the null hypothesis was rejected for 1979.

Table 4.6.--Number and percentage of completer participants and nonparticipants of cooperative education programs employed in unrelated jobs, by year.

Year	Total N	Participants		Nonparticipants		n Difference	Chi-Square Value
		Number	%	Number	%		
1981	1,494	445	29.8	1,049	70.2	-604	244.19*
1980	1,268	441	34.8	827	65.2	-386	117.50*
1979	1,493	539	36.1	954	63.9	-415	115.35*
1978	1,302	575	44.2	727	55.8	-152	17.75*

*Significant at $p < .05$.

For 1980, of 1,268 respondents employed in unrelated jobs, 441 or 34.8% had participated in cooperative education programs and 827 or 65.2% had not. The chi-square analysis for these completers showed that the difference was significant at the $p < .05$ alpha level. Therefore, the null hypothesis was rejected.

There were 1,494 completers for 1981. Of these, 445 or 29.8% were employed in unrelated jobs and had participated in cooperative education programs. The other 1,049 or 70.2% employed in unrelated jobs had not participated in cooperative education programs. The chi-square analysis indicated that there was a significant difference between the two groups. As a result, the null hypothesis was rejected for 1981.

For each of the four years studied, the percentage of office occupations completers in unrelated jobs was significantly greater among those who had not participated in cooperative education programs.

Hence the null hypothesis of no significant difference was rejected for all four years.

Ho 8: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in unrelated jobs and have participated in cooperative education programs and those who have not.

Table 4.7 contains the data used in testing Hypothesis 8. For 1978 there were 55 male program completers, of whom 33 or 60.0% had participated in cooperative education programs. Twenty-two or 40.0% of the male respondents employed in unrelated jobs had not participated in cooperative education programs as part of their vocational office occupations training. The chi-square analysis for these completers showed that, for male completers in 1978, there was an apparent relationship between the variables, resulting in the rejection of the null hypothesis.

For this same year, 1,233 female completers were employed in unrelated jobs. Of these respondents, 538 or 43.6% had participated in cooperative education programs, and 695 or 56.4% had not taken part in such programs. The chi-square analysis indicated that, for female respondents in 1978, an apparent relationship existed between not having participated in a cooperative education program and being employed in unrelated jobs. Therefore, the null hypothesis was rejected.

Respondents for 1979 included 50 male and 1,429 female completers employed in unrelated jobs. Twenty-three or 46.0% of the male completers had participated in cooperative education programs, and

Table 4.7.--Number and percentage of male and female completer participants and nonparticipants of cooperative education programs employed in unrelated jobs, by year.

Year	Males							Females							Interaction Chi-Square Value
	Total n	Participants		Nonparticipants		n Diff.	Chi-Square Value	Total n	Participants		Nonparticipants		n Diff.	Chi-Square Value	
		n	%	n	%				n	%	n	%			
1981	50	17	34.0	33	66.0	-16	10.24	1,438	427	29.7	1,011	70.3	-554	474.35	.24
1980	37	14	37.8	23	62.2	- 9	4.37	1,227	427	34.8	800	65.2	-373	226.80	.04
1979	50	23	46.0	27	54.0	- 4	0.64	1,429	507	35.5	922	64.5	-415	241.04	1.89
1978	55	33	60.0	22	40.0	-10	4.40	1,233	538	43.6	695	56.4	-157	40.0	5.07*

*Significant at $p < .05$.

27 or 54.0% had not participated in such programs. The chi-square analysis of the data for these respondents indicated that, for male completers in 1979, no apparent relationship existed between having unrelated jobs and participation in cooperative education programs. Therefore, the null hypothesis could not be rejected.

Of the female respondents for the same year, 507 or 35.5% had participated in cooperative education programs. There were 922 or 64.5% of the female respondents employed in unrelated jobs who had not participated in cooperative education programs. The chi-square analysis for these female completers showed that the relationship between the variables was significant. Therefore, the null hypothesis was rejected for female respondents in 1979.

For 1980, there were 37 male respondents. Fourteen or 37.8% of them had participated in cooperative education programs and held unrelated jobs at the time of the survey. Twenty-three or 62.2% of the male respondents who held unrelated jobs nine months after completion had not participated in cooperative education programs. The chi-square analysis demonstrated that the relationship between having participated in cooperative education programs and being employed in related jobs was significant. This finding resulted in the rejection of the null hypothesis.

The female respondents for 1980 included 1,227 completers. Of these individuals, 427 or 34.8% had participated in cooperative education programs and held unrelated jobs nine months after completion. Eight hundred or 65.2% of the 1980 female completers who held unrelated

jobs nine months after completion had not participated in cooperative education programs. The null hypothesis was rejected because the chi-square analysis for these completers indicated that the relationship was significant.

For 1981, the respondents who were employed in unrelated jobs consisted of 50 male completers and 1,438 female completers. Seventeen or 34.0% of the male respondents were employed in unrelated jobs and had participated in cooperative education programs as part of their vocational office occupations training. Thirty-three or 66% of the male completers employed in unrelated jobs had not participated in cooperative education programs. The chi-square analysis for these data indicated that the difference was significant. Therefore, the null hypothesis was rejected.

There were 427 or 29.7% of the female completers employed in unrelated jobs who had participated in cooperative education programs. Female completers who had not participated in such programs and were employed in unrelated jobs numbered 1,011 or 70.3%. The chi-square analysis showed that a significant relationship existed between not having participated in cooperative education programs and unrelated employment. As a result, the null hypothesis was rejected. Except in 1979, when the difference for male nonparticipants was not significant, both male and female nonparticipants showed higher unrelated employment than participants for each of the four years studied.

Ho 9: There is no significant interaction between unrelated employment and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.7 contains the data for this hypothesis. The purpose of Hypothesis 9 was to examine whether gender was significant with respect to participants and nonparticipants being employed in unrelated jobs. The interaction was measured by the chi-square statistic. The null hypothesis was rejected for 1978 because a significant interaction was demonstrated by the chi-square analysis. Based on the chi-square values, the null hypothesis was not rejected for 1979, 1980, and 1981. No apparent relationship was demonstrated between gender and unrelated employment with respect to participation or nonparticipation in cooperative education programs.

Job Satisfaction for Participants and Nonparticipants of Cooperative Education Programs

Ho 10: There is no significant difference in the mean level of job satisfaction between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.8 displays the data used in testing Hypothesis 10. On the survey form, completers made their response to the question: Overall, how satisfied are you with your present job? Respondents were to choose Very Satisfied, Somewhat Satisfied, Not Very Satisfied, or Not At All Satisfied. All responses to this question were included in the analysis.

The t-test statistic was chosen to determine mean job-satisfaction level. A lower mean job-satisfaction value indicated a higher level of job satisfaction.

Table 4.8.--Number and mean job-satisfaction level of employed completer participants and nonparticipants of cooperative education programs, by year.

Year	Total N	Participants			Nonparticipants			Mean Difference	t Value
		n	Mean	S.D.	n	Mean	S.D.		
1981	4,307	1,869	1.65	0.80	2,438	1.89	0.91	-0.24	-9.10*
1980	4,009	1,950	1.70	0.81	2,059	1.84	0.87	-0.14	-5.34*
1979	5,616	2,626	1.63	0.75	3,070	1.71	0.78	-0.08	-4.20*
1978	4,919	2,642	1.61	0.76	2,277	1.69	0.80	-0.08	-3.38*

Note: Lower job-satisfaction mean values indicate higher levels of job satisfaction.

*Significant at $p < .05$.

In 1978, there were 4,919 employed completers, of whom 2,642 had participated in cooperative education programs. The t-test for job satisfaction produced a mean of 1.61 (S.D. = 0.76) for these participants. For 2,277 nonparticipants, the mean job-satisfaction level was 1.69 (S.D. = 0.80). The mean difference for job satisfaction was significant. The null hypothesis was rejected as an apparent relationship was demonstrated between having participated in cooperative education programs and job satisfaction.

In 1979, there were 5,616 employed completers, 2,626 of whom had participated in cooperative education programs. The t-test produced a mean of 1.63 (S.D. = 0.75) for these participants. For 3,070 nonparticipant completers, the mean job-satisfaction level was 1.71 (S.D. = 0.78). This finding indicated that the null hypothesis must be rejected as a significant difference was demonstrated between mean levels of job satisfaction for cooperative education participants and nonparticipants.

For 1980, of 4,009 respondents, 1,950 had participated in cooperative education programs. The t-test produced a mean of 1.70 (S.D. = 0.81) for these participants. On the other hand, 2,059 nonparticipant completers showed a mean job-satisfaction level of 1.84 (S.D. = 0.87). Completer participants demonstrated significantly higher levels of job satisfaction than did nonparticipants. Therefore, the null hypothesis was rejected.

Similar results occurred for the data collected from 4,307 respondents in 1981. The mean job-satisfaction level for 1,869

participant completers was 1.65 (S.D. = 0.80); it was 1.89 (S.D. = 0.91) for 2,438 nonparticipant completers. The null hypothesis was rejected because the results of the t-test showed there was a significant difference in job satisfaction between participant and nonparticipant completers.

For each year studied, the vocational office occupations completers who had participated in cooperative education programs showed a mean job-satisfaction value significantly lower than those who had not participated in such programs. Therefore, as indicated by the t-test analysis, an apparent relationship was demonstrated between job satisfaction and having participated in cooperative education programs. The null hypothesis stating that there was no significant difference was thereby rejected for each year.

Ho 11: There is no significant difference in the level of job satisfaction between male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.9 contains the data used in testing Hypothesis 11. In 1978, there were 107 employed male respondents, of whom 69 had participated in cooperative education programs as part of their vocational office occupations training. The t-test analysis produced a mean job-satisfaction value of 1.71 (S.D. = 0.88) for these participants. For 38 male nonparticipants, the mean job-satisfaction level was 1.53 (S.D. = 0.76). As a lower mean level indicated greater job satisfaction, nonparticipants in 1978 were more satisfied with their jobs than were participants. The difference by the t-test value was not significant, however. Therefore, the null hypothesis could not be rejected.

Table 4.9.--Number and mean job-satisfaction level of employed male and female completer participants and nonparticipants of cooperative education programs, by year.

Year	Males									Females									F-Value for Interaction
	Total N	Participants			Nonparticipants			Mean Diff.	t-Value	Total N	Participants			Nonparticipants			Mean Diff.	t-Value	
		n	Mean	S.D.	n	Mean	S.D.				n	Mean	S.D.	n	Mean	S.D.			
1981	113	47	1.66	0.79	66	1.95	0.97	-0.29	-1.78	4,178	1,818	1.65	0.80	2,360	1.88	0.91	-0.23	-8.92*	0.12
1980	77	38	1.79	0.94	39	2.21	1.06	-0.42	-1.83	3,921	1,905	1.70	0.81	2,016	1.83	0.87	-0.13	-5.05*	2.11
1979	114	62	1.74	0.87	52	1.81	0.79	-0.07	-0.42	5,254	2,533	1.62	0.75	2,991	1.71	0.78	-0.09	-4.21*	0.02
1978	107	69	1.71	0.88	38	1.53	0.76	0.18	1.13	4,774	2,557	1.61	0.76	2,217	1.69	0.80	-0.08	-3.64*	2.81

*Significant at $p < .05$.

In 1978, there were 4,774 employed female respondents, of whom 2,557 had participated in cooperative education programs as part of their vocational office occupations training. The t-test produced a mean job-satisfaction value of 1.61 (S.D. = 0.76) for these participants. The mean level of job satisfaction for 2,217 female nonparticipants was 1.69 (S.D. = 0.80). The difference was significant, indicating that the null hypothesis must be rejected.

For 1979, there were 114 employed male completers, 62 of whom had participated in cooperative education programs. The t-test analysis produced a mean job-satisfaction value of 1.74 (S.D. = 0.87) for these participants. The mean job-satisfaction level for 52 male nonparticipants was 1.81 (S.D. = 0.79). Although the mean level of job satisfaction for the cooperative education participants was lower by the t-test (a lower mean represents a higher level of job satisfaction), the difference was not significant. Therefore, the hypothesis could not be rejected.

Of 5,524 female respondents in 1979, 2,533 had participated in cooperative education programs as part of their vocational office occupations training. The t-test analysis produced a mean job-satisfaction value of 1.62 (S.D. = 0.75) for these participants. For 2,991 female nonparticipants, 1.71 (S.D. = 0.78) was the mean job-satisfaction value produced by the t-test. The difference between these mean values was significant, indicating that female completers who had participated in cooperative education programs were more satisfied with their jobs than were those who had not participated. Thus the null hypothesis was rejected.

In 1980, there were 77 male respondents, of whom 38 had participated in cooperative education programs. The mean level of job satisfaction for these participants was 1.79 (S.D. = 0.94). For the 39 male nonparticipants, the mean by the t-test was 2.21 (S.D. = 1.06). Male completers who had participated in cooperative education programs had a considerably higher level of job satisfaction than did male completers who had not participated in such programs. However, the difference was not significant; therefore, the null hypothesis was not rejected.

Also for 1980, female respondents who had participated in cooperative education programs also demonstrated a slightly higher level of job satisfaction. Of 3,921 female respondents, 1,905 participants scored a mean job-satisfaction value of 1.70 (S.D. = 0.81) by the t-test; 2,016 nonparticipants scored a mean job-satisfaction value of 1.83 (S.D. = 0.87). The difference was significant; thus the null hypothesis was rejected.

In 1981, of 113 male respondents, 47 had participated in cooperative education programs. The t-test analysis produced a mean job-satisfaction value of 1.66 (S.D. = 0.79). The 66 nonparticipants scored a mean job-satisfaction value of 1.95 (S.D. = 0.97). Although the completers who had participated in cooperative education programs indicated a higher mean level of job satisfaction, the difference as shown by the t-test was not significant. Therefore, the null hypothesis could not be rejected.

Of 4,178 female completers in 1981, 1,818 had participated in cooperative education programs. The t-test value for mean job satisfaction was 1.65 (S.D. = 0.80). For the female respondents who had not participated in cooperative education programs, the t-test value for mean job-satisfaction level was 1.88 (S.D. = 0.91). These results show that there was a significant difference, which indicated an apparent relationship between job satisfaction and participation in cooperative education programs for female respondents in 1981. Therefore, the null hypothesis was rejected.

Male completers in all but one year (1978) demonstrated greater job satisfaction when they had participated in cooperative education programs. The differences, however, were not significant for any of the years studied. Female completers who had participated in cooperative education programs also expressed a greater level of job satisfaction than those who had not participated. The difference for female completers was significant for each year studied. Therefore, the null hypothesis of no significant difference was not rejected for male participants, but it was rejected for female participants.

Ho 12: There is no significant interaction between levels of job satisfaction of secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Table 4.9 contains the data for Hypothesis 12. For this hypothesis, the F-value statistic was used to demonstrate the interaction between levels of job satisfaction and gender of participants and non-participants. When the data for male and female respondents were

combined to identify the significance of gender as an indicator of job satisfaction, the values produced by the F-test demonstrated that there was no significant interaction between gender of the completer and job satisfaction for any of the years studied. Therefore, the hypothesis was not rejected because no apparent relationship between gender of the completer and job satisfaction was demonstrated.

Wage Rate for Male and Female Participants and Nonparticipants in Cooperative Education Programs

Ho 13: There is no significant difference in mean wage rates between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.10 contains the data used in testing Hypothesis 13. The survey question relating to wages was: On my present job, I am paid about $_____ an hour. All responses to this question were used in the analyses. The t-test statistic was selected to produce the mean wage rates for respondents who had participated in cooperative education programs and those who had not, for each year studied.

For 1978, of 4,970 respondents, 2,667 who had participated in cooperative education programs earned a mean wage of $4.41 per hour (S.D. = 5.31). Those 2,303 respondents who had not participated in cooperative education programs received a mean wage of $4.45 per hour (S.D. = 5.72). Although the mean wage rate for nonparticipants was slightly higher than that for participants, the results of the t-test demonstrated no significant difference at the .05 alpha level. Therefore, the null hypothesis could not be rejected.

Table 4.10.--Number and mean wage rate of employed male and female completer participants and nonparticipants of cooperative education programs, by year.

Year	Total N	Participants			Nonparticipants			Mean Difference	t Value
		n	Mean ($)	S.D.	n	Mean ($)	S.D.		
1981	4,336	1,880	4.14	1.86	2,456	3.88	1.74	0.28	5.76*
1980	4,048	1,969	4.04	1.39	2,079	3.86	1.68	0.18	3.76*
1979	5,723	2,637	3.90	0.96	3,086	3.59	0.93	0.31	12.40*
1978	4,970	2,667	4.41	5.31	2,303	4.45	5.72	-0.04	-0.27

*Significant at $p < .05$.

Of the 4,723 respondents in 1979, 2,637 had participated in cooperative education programs as part of their vocational office occupations training. The t-test analysis produced a mean wage of $3.90 per hour (S.D. = 0.96). Nonparticipants' mean wage was $3.59 per hour (S.D. = 0.93). As shown by the t-test, the difference between these mean wage rates was significant. An apparent relationship was demonstrated between participation in cooperative education programs and wage rate. Thus the null hypothesis was rejected for 1979.

In 1980, of 4,048 respondents, 1,969 cooperative education program participants had a mean wage of $4.04 per hour (S.D. = 1.39), and 2,079 nonparticipants had a mean wage of $3.86 per hour (S.D. = 1.68). As evidenced by the results of the t-test, the difference was significant. As in the previous year, an apparent relationship was demonstrated between wage rate and participation in cooperative education programs. Therefore, the null hypothesis was rejected.

For 1981, of 4,336 respondents, the mean wage rate for 1,880 who had participated in cooperative education programs was $4.14 per hour (S.D. = 1.86); the mean wage for nonparticipants was $3.88 per hour (S.D. = 1.74). The results of the t-test demonstrated a significant relationship between wage rate and participation in cooperative education programs. Hence the null hypothesis was rejected.

The null hypothesis of no significant difference was not rejected for 1978 because no significant difference was observed for that year. For 1979, 1980, and 1981, however, a significant difference

in wage rate was revealed between those who had participated in cooperative education programs and those who had not. Therefore, Hypothesis 13 was rejected for those three years.

Ho 14: There is no significant difference in mean wage rates between male and female secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Table 4.11 contains the data used in testing Hypothesis 14. The t-test statistic was selected to produce the mean wage rates for male and female respondents who had participated in cooperative education programs and those who had not participated, for each of the years studied.

For 1978, there were 109 employed male respondents, of whom 70 had participated in cooperative education programs. The t-test analysis produced a mean wage rate of $4.90 per hour (S.D. = 3.38) for these participants. For 39 male nonparticipants in 1978, the mean wage rate was $5.40 per hour (S.D. = 5.54). The null hypothesis was not rejected as no significant difference was demonstrated between participants and nonparticipants in terms of wage rates.

For the same year, of 4,822 female respondents, 2,581 had participated in cooperative education programs. The t-test showed a mean wage rate of $4.40 per hour (S.D. = 5.36) for these participants. The mean wage rate for 2,241 female nonparticipants was $4.41 per hour (S.D. = 5.64). As shown by the t-test result, there was no significant difference in mean wage rates between female participants

Table 4.11.--Number and mean wage rate of employed male and female completer participants and nonparticipants of cooperative education programs.

Year	Males									Females									F-Value for Interaction
	Total N	Participants			Nonparticipants			Mean Diff.	t-Value	Total N	Participants			Nonparticipants			Mean Diff.	t-Value	
		n	Mean ($)	S.D.	n	Mean ($)	S.D.				n	Mean ($)	S.D.	n	Mean ($)	S.D.			
1981	116	47	4.22	1.29	69	4.10	1.17	0.12	0.50	4,204	1,829	4.14	1.18	2,375	3.84	1.21	0.30	8.22*	0.23
1980	80	41	4.24	0.96	39	4.36	1.45	-0.12	-0.43	4,055	1,919	4.04	1.39	2,306	3.85	1.68	0.19	3.93*	0.42
1979	115	62	4.44	1.65	53	4.19	1.59	0.25	0.83	5,550	2,544	3.89	0.93	3,006	3.58	0.91	0.31	12.36*	0.04
1978	109	70	4.90	3.38	39	5.40	5.54	-0.50	-0.52	4,822	2,581	4.40	5.36	2,241	4.41	5.64	-0.01	-0.08	0.16

*Significant at $p < .05$.

and nonparticipants. Therefore, the null hypothesis could not be rejected.

For 1979, there were 115 employed male completers, 62 of whom had participated in cooperative education programs. The t-test analysis produced a mean wage rate of $4.44 per hour (S.D. = 1.65) for these participants. The mean wage rate for 53 nonparticipants was $4.19 per hour (S.D. = 1.59). The t-test result demonstrated that there was no significant difference in wage rates between male participants and nonparticipants in 1979. As a result, the null hypothesis could not be rejected.

Of 5,550 female respondents in 1979, 2,544 had participated in cooperative education programs. The t-test analysis produced a mean wage rate of $3.89 per hour (S.D. = 0.93) for these participants. For 3,006 female nonparticipants, the mean wage rate was $3.58 per hour (S.D. = 0.91). According to the results of the t-test, it was demonstrated that for these female completers there was a significant difference in mean wage rates between participants and nonparticipants in cooperative education programs. Therefore, the null hypothesis was rejected.

Of 80 male respondents in 1980, 41 had participated in cooperative education programs. The mean wage rate for these participants was $4.24 per hour (S.D. = 0.96). The 39 male respondents who had not participated in such programs received a mean wage rate of $4.36 per hour (S.D. = 1.45). The t-test for these data showed that there was no

significant difference in wage rates between male participants and nonparticipants. Therefore, the null hypothesis could not be rejected.

For 4,055 female respondents in 1980, 1,919 had participated in cooperative education programs. The mean wage rate for these participants was $4.04 per hour (S.D. = 1.39). For 2,306 female nonparticipants, the mean wage rate by the t-test analysis was $3.85 per hour (S.D. = 1.68). The t-test analysis for these data indicated that there was an apparent relationship between wage rate and participation in cooperative education programs for female completers in 1980. Hence the null hypothesis was rejected.

In 1981, of 116 male respondents, 47 had participated in cooperative education programs. The mean wage rate produced by the t-test analysis was $4.22 per hour (S.D. = 1.29). The mean wage rate for 69 male nonparticipants was $4.10 per hour (S.D. = 1.17). The t-test analysis showed there was no significant difference in mean wage rates between male participants and nonparticipants in 1981. Therefore, the null hypothesis could not be rejected.

Of 4,204 female respondents in 1981, 1,829 had participated in cooperative education programs. The mean wage rate for these participants was $4.14 (S.D. = 1.18). For 2,375 female nonparticipants, the mean wage rate was $3.84 (S.D. = 1.21). As demonstrated by the t-test results, there was an apparent relationship between wage rate and participation in cooperative education programs. As there was a significant difference, the null hypothesis was rejected.

For 1978 and 1980, the mean wage rates for male nonparticipants were slightly higher than for male completers who had participated in cooperative education programs. For 1979 and 1981, male participants had slightly higher mean wage rates than did nonparticipants. The results of the t-test analysis, which was used to determine the mean difference, demonstrated that there was no significant difference in mean wage rates between male completers who had participated in cooperative education programs and those who had not participated, for each year of the study. Thus the null hypothesis for male completers was not rejected for any of the four years included in the study.

In 1978, the mean wage level for female respondents who had participated in cooperative education programs was just lower than that for nonparticipants. The difference between the mean wage rates for these completers was not significant. In 1979, 1980, and 1981 the mean wage rates for females who had participated in cooperative education programs were higher than those for nonparticipants. The difference for each year was significant, according to the t-test results. Based on the results of these analyses, the null hypothesis was not rejected for female completers in 1978, but was rejected for female completers in 1979, 1980, and 1981.

Ho 15: There is no significant interaction between mean wage rate and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Table 4.11 contains the data used in testing Hypothesis 15. The F-test was used to determine interaction between mean wage rate and

gender of completers who had participated in cooperative education programs and those who had not participated.

The interaction between mean wage rate and gender was not significant for any of the four years studied. Gender of completers did not affect mean wage rates for participants or nonparticipants. Therefore, the null hypothesis could not be rejected.

Consistency in Levels of Related Employment, Job Satisfaction, and Mean Wage Rates for Male and Female Completers

Ho 16: There is no consistency in the levels of related employment, job satisfaction, and mean wage rate for male and female secondary vocational office occupations completers. (This hypothesis does not include the cooperative education distinction.)

Tables 4.12, 4.13, and 4.14, as well as Figures 4.1, 4.2, and 4.3 contain the data used in testing Hypothesis 16.

Related and unrelated unemployment. Consistency was demonstrated by the percentage of male and female respondents employed in related and unrelated jobs for each of the four years studied (see Table 4.12). On the Michigan Department of Education, Vocational-Technical Education Service's annual vocational education follow-up survey form, respondents were asked to indicate whether they were employed in related or unrelated jobs by referring to the frequency with which they used the vocational office occupations training they had received. Choices on the survey were: A Lot, Some, Hardly Any,

Table 4.12.--Number and percentage of male and female completers employed in related and unrelated jobs, by year.

Gender	1978 Completers				1979 Completers				1980 Completers				1981 Completers			
	Total n	Related n	%	Unrelated n	%	Total n	Related n	%	Unrelated n	%	Total n	Related n	%	Unrelated n	%	Total n	Related n	%	Unrelated n	%
Male	116	56	48.3	60	51.7	114	63	55.3	51	44.7	84	46	54.8	38	45.2	116	66	56.9	50	43.1
Female	4,978	3,679	73.9	1,299	26.1	5,702	4,221	74.0	1,481	26.0	4,003	2,749	68.7	1,254	31.3	4,201	2,758	65.7	1,443	34.3

and None. If the respondents indicated A Lot or Some, they were recorded as having related employment. If they indicated Hardly Any or None, they were recorded as having unrelated employment. All responses were included in the percentage distribution.

In 1978, 48.3% of the male completers held related jobs and 51.7% held unrelated jobs. For the same year, 73.9% of the female completers held related jobs and 26.1% held unrelated jobs.

In 1979, 55.3% of the male completers were employed in related jobs and 44.7 percent held unrelated jobs. The same year, 74.0% of the female completers were employed in related jobs and 26.0% held unrelated jobs.

For 1980, 54.8% of the male completers were employed in related jobs and 45.2% held unrelated jobs. There were 68.7% of the female completers who held related jobs and 31.3% who had unrelated employment in 1980.

For the 1981 male completers, 56.9% had related employment and 43.1 percent held unrelated jobs. There were 65.7% of the female respondents employed in related jobs and 34.3% held unrelated jobs.

The consistency in the levels of related and unrelated employment for male and female completers can be seen in Figure 4.1, which shows the movement of the percentage of employed completers over the four years studied. The percentage of male completers employed in related jobs, except for a .5% drop in 1980, increased from 48.3% in 1978 to 56.9% in 1981. For female respondents, the percentage employed in related jobs was nearly the same for 1978 and 1979; that is, 73.9%

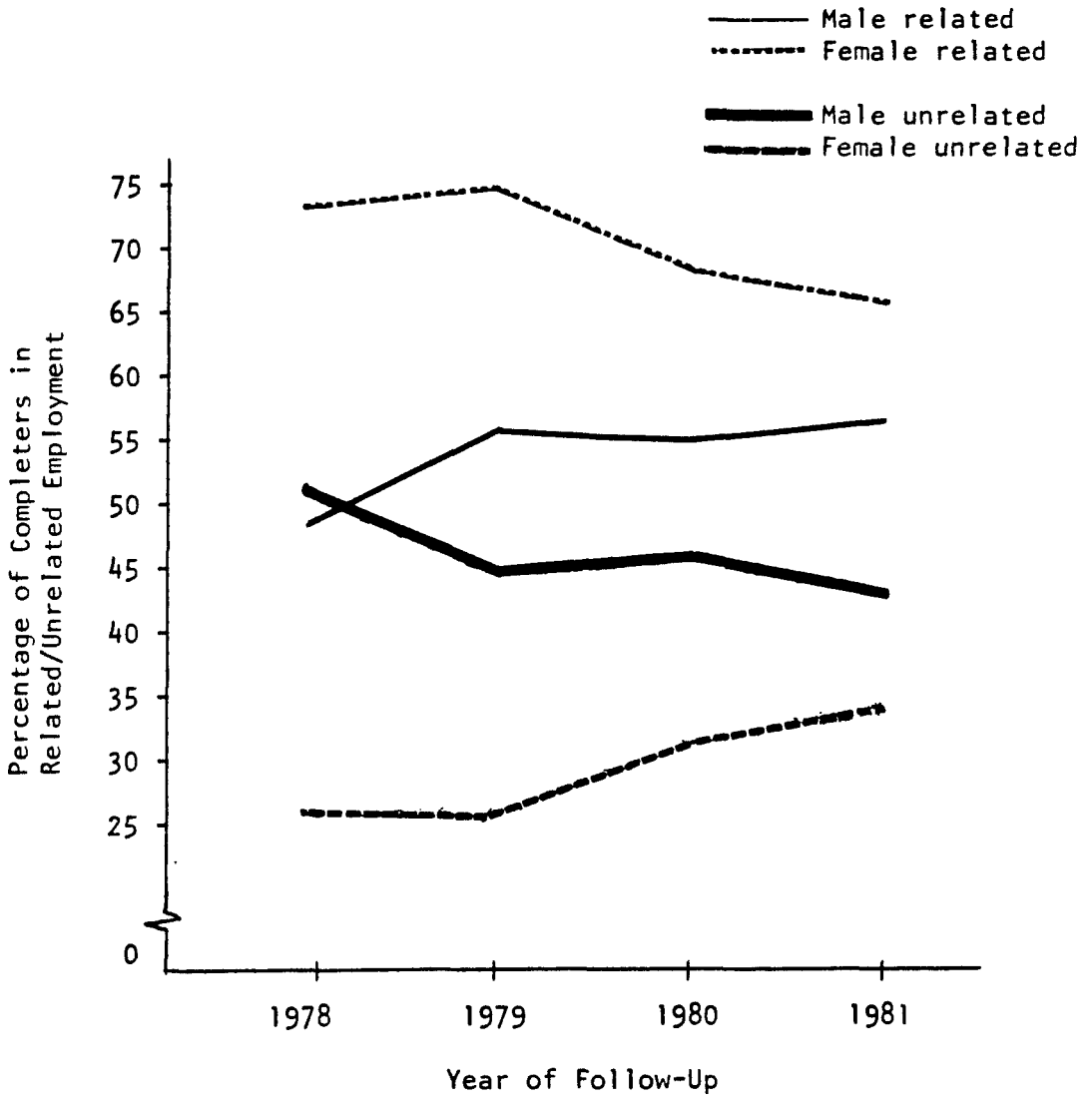

Figure 4.1: Percentage of male and female completers employed in related and unrelated jobs, by year.

and 74.0%, respectively. In 1980, this figure decreased to 68.7%, and to 65.7% in 1981.

The percentage of female completers employed in related jobs declined, and the percentage of male completers employed in related jobs showed an upward movement. Therefore, the null hypothesis for no consistency in related employment was not rejected. No consistency was demonstrated between male completers and female completers with respect to being employed in related jobs.

Job satisfaction. Consistency for job satisfaction between male and female respondents was determined by the mean job-satisfaction levels over the four years studied (see Table 4.13).

For 1978, the mean job-satisfaction score was 1.65 for male completers. In 1979, the mean level of job satisfaction for male completers was 1.78. In 1980, the mean was 1.99. From 1978 through 1980, the mean level of job satisfaction for male completers decreased. In 1981, the mean level of job satisfaction for male vocational office occupations completers was 1.83, which demonstrated a movement toward greater job satisfaction in 1981.

For female respondents, the mean level of job satisfaction for 1978 was 1.65. In 1979, 1.67 was the mean job-satisfaction level for female completers in office occupations. For 1980, a mean of 1.77 demonstrated a decrease in job satisfaction, as did the mean value of 1.78 in 1981.

For male completers, the mean job-satisfaction levels showed a steady decline for the first three years studied and then moved upward

Table 4.13.--Number, mean, and standard deviation job-satisfaction values for employed male and female completers.

Gender	Job Satisfaction:[a] 1978 Completers			Job Satisfaction: 1979 Completers			Job Satisfaction: 1980 Completers			Job Satisfaction: 1981 Completers		
	Total n	Mean	S.D.	Total n	Mean	S.D.	Total n	Mean	S.D.	Total n	Mean	S.D.
Male	115	1.65	0.83	117	1.78	0.83	83	1.99	0.98	113	1.83	0.91
Female	4,993	1.65	0.78	5.720	1.67	0.76	4,002	1.77	0.84	4,184	1.78	0.87

[a]Higher job-satisfaction values indicate lower job satisfaction.

(see Figure 4.2). For female completers, the mean level of job satisfaction moved to an increasingly lower level in each of the four years studied. In 1981, the mean job-satisfaction level for female completers did not return to a higher level as it did for male completers in office occupations. The mean job-satisfaction levels for male and female respondents generally moved in the same direction for 1978, 1979, and 1980 as job satisfaction decreased for both groups. However, no consistency was demonstrated between levels of job satisfaction for male and female completers of vocational office occupations programs over the four years studied. Therefore, the null hypothesis was not rejected.

Wage rate. The consistency for mean wage rates of male and female completers was demonstrated by the mean rate of pay for all responses to the wage-level question for each year studied (see Table 4.14).

Male completers in 1978 had a mean wage rate of $5.07 per hour. In 1979, the mean wage rate decreased to $4.31 per hour, and in 1980 it declined slightly to $4.29 and continued to drop to $4.15 per hour in 1981.

For female completers, the mean wage rate in 1978 was $4.37 per hour. In 1979, the mean wage rate for female completers decreased to $3.72 per hour. In 1980 there was an increase to $3.94 per hour, and in 1981, $3.97 was the mean wage rate for female completers. The mean wage rate increased in 1980 and in 1981, but the increase was still below the 1978 mean wage rate for female completers.

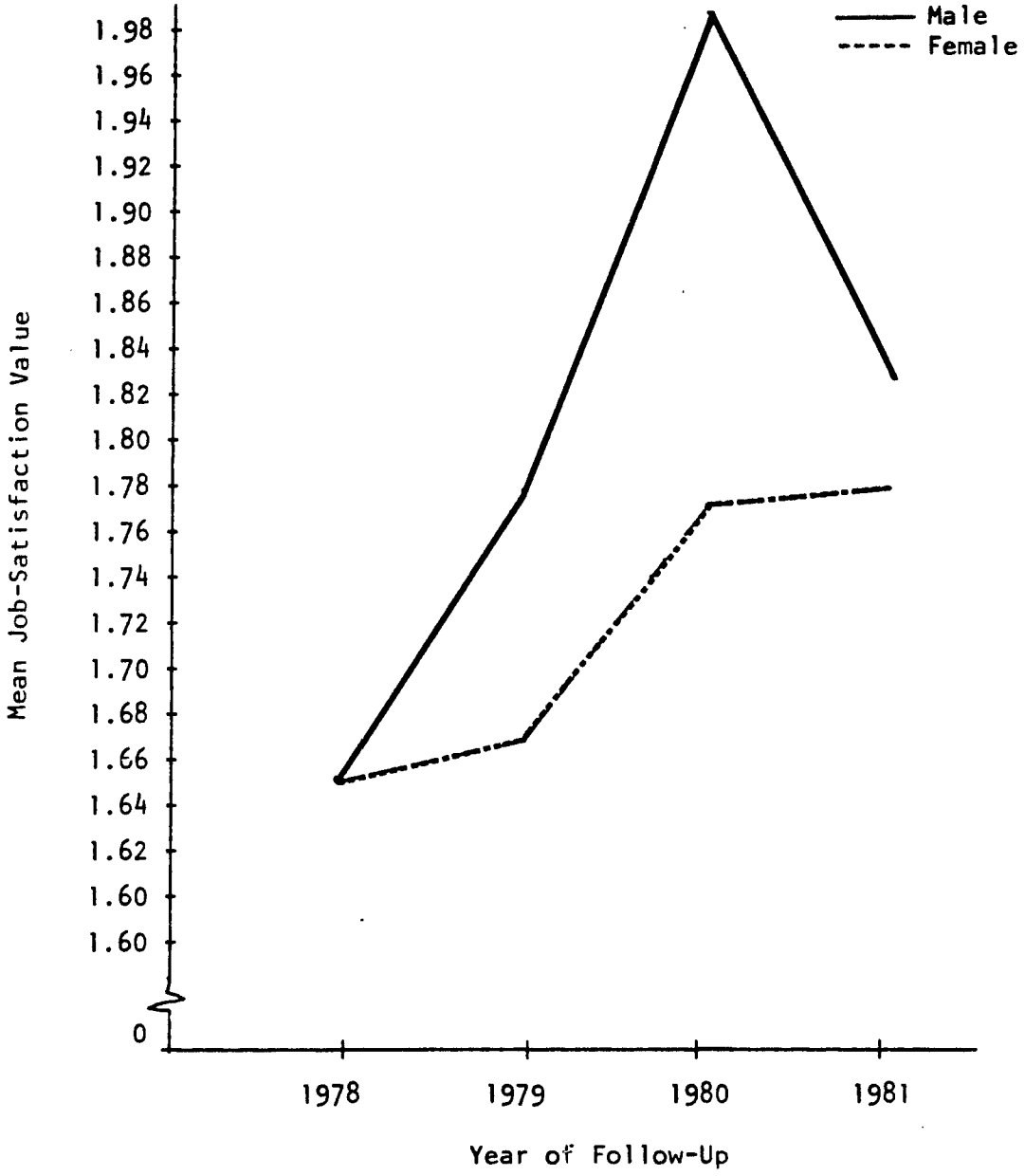

Figure 4.2: Number, mean, and standard deviation job-satisfaction values for employed male and female completers, by year. (Note: A higher value indicates a lower (more negative) job satisfaction.)

Table 4.14.--Number, mean, and standard deviation of hourly wage rates for employed male and female completers, by year.

Gender	1978 Completers			1979 Completers			1980 Completers			1981 Completers		
	Total N	Hourly Wage ($)		Total N	Hourly Wage ($)		Total N	Hourly Wage ($)		Total N	Hourly Wage ($)	
		Mean	S.D.		Mean	S.D.		Mean	S.D.		Mean	S.D.
Male	117	5.07	4.12	118	4.31	1.61	86	4.29	1.20	116	4.15	1.21
Female	5,042	4.37	5.40	5,748	3.72	0.94	4,036	3.94	1.54	4,210	3.97	1.21

The mean wage rate for male completers decreased each year. The greatest decrease occurred between 1978 and 1979. Although the decrease continued, it was much less from 1979 to 1981. Figure 4.3 illustrates the movement of the mean wage rates for male and female completers. Although some increase was evident in 1980 and 1981, the mean wage rate for female completers was lower than for male completers of vocational office occupations programs for each year studied. Therefore, the null hypothesis was not rejected because no consistency was demonstrated between wage rates for male and female vocational office occupations completers.

Ho 17: There are no discernible trends for related employment, job satisfaction, or mean wage rate for male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not, over the four years included in this study.

Figures 4.4 through 4.14 illustrate the data for Hypothesis 17. These graphs demonstrate the movement of the variables for vocational office occupations completers from 1978 through 1981. These graphs, presented in order of the null hypotheses examined thus far, illustrate trends that may have existed for the variables researched. The descriptive trend analysis was used to examine the differences for each year. A trend was identified by a successively greater or successively smaller movement in the same direction over time.

Employment status of respondents nine months after completion of vocational office occupations training programs. Figure 4.4 illustrates the movement of the plotted percentage points for respondents employed nine months after completion. The graph illustrates a

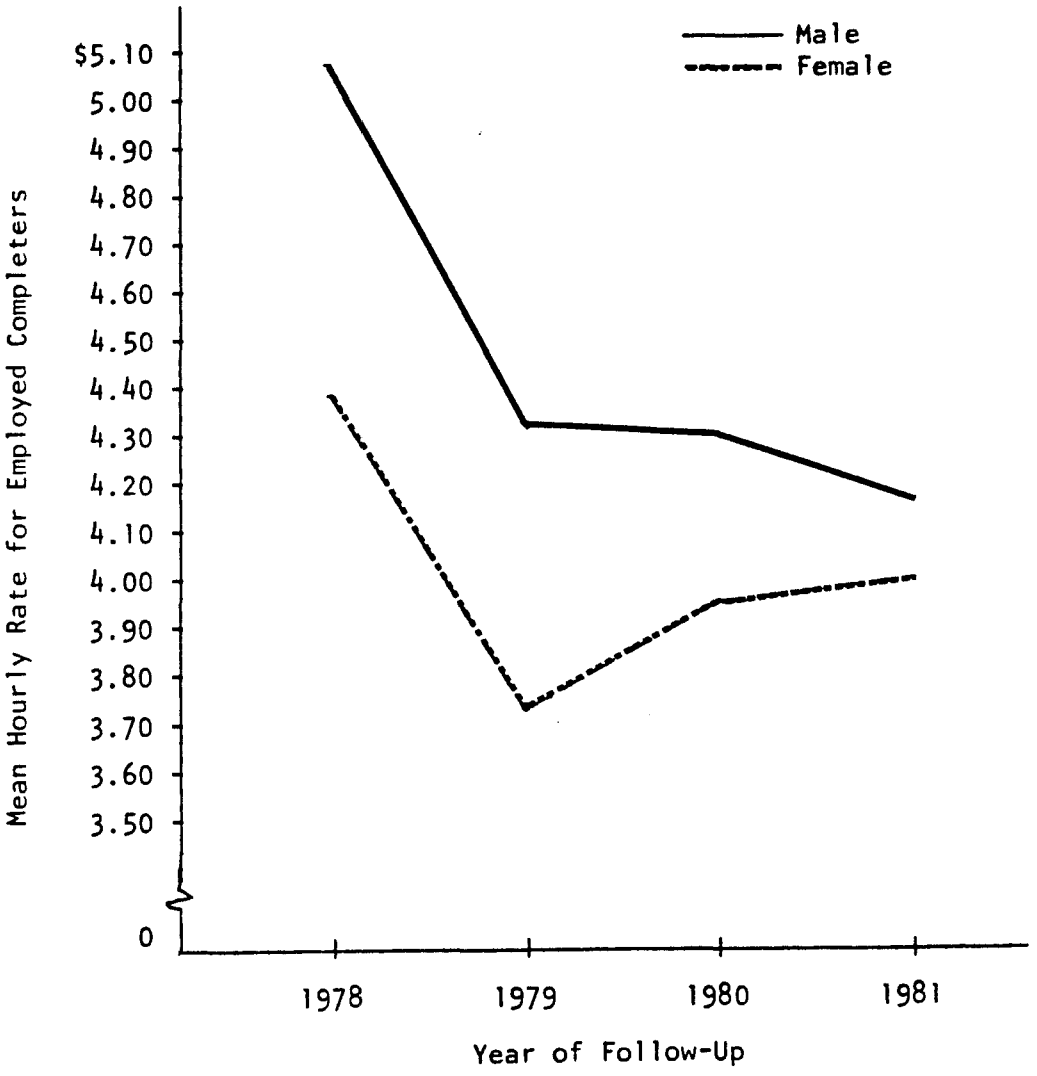

Figure 4.3: Number, mean, and standard deviation of hourly wage rates for employed male and female completers, by year.

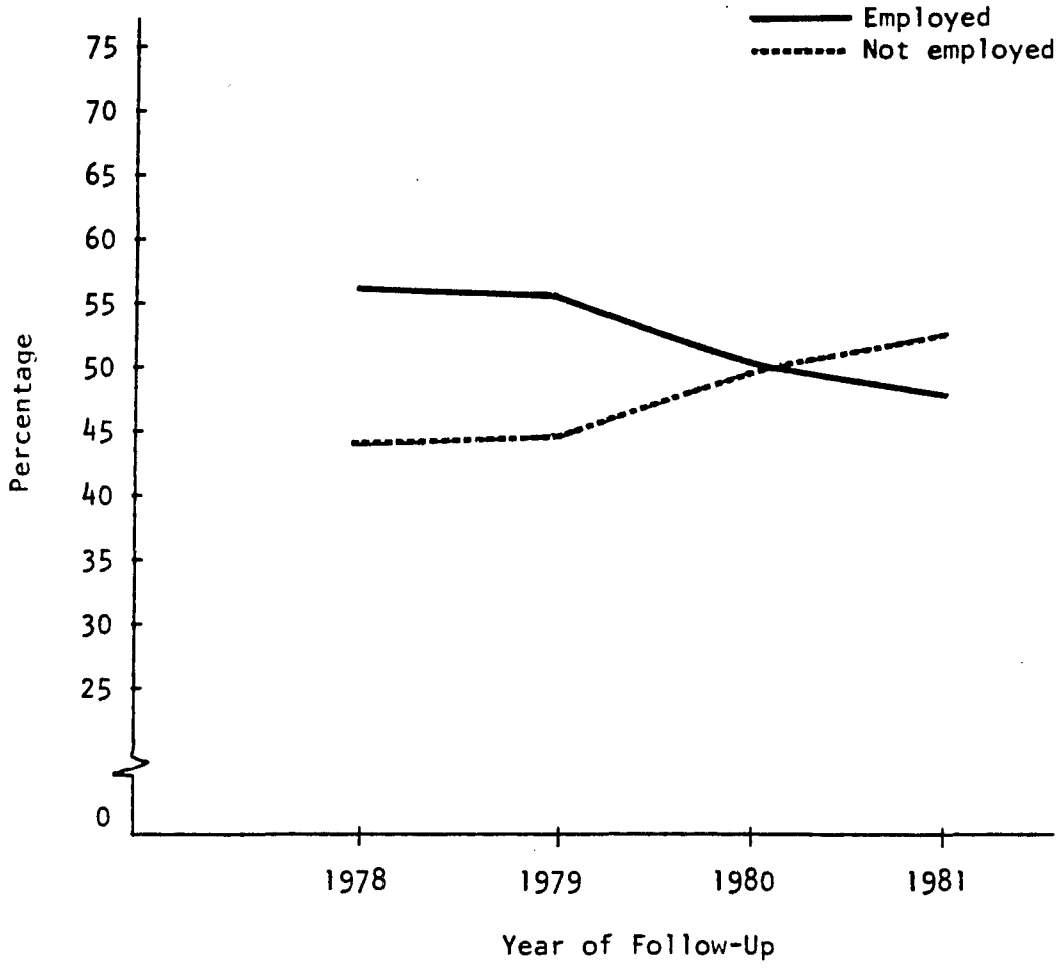

Figure 4.4: Employment status of respondents nine months after completion of vocational office occupations training programs.

successive decline of 7.6% over the four years studied. This successive movement downward for employed completers, and corresponding successive movement upward for unemployed completers, met the criteria for a trend. The data demonstrated a discernible trend downward in the number employed nine months after completion.

Employed completer participants and nonparticipants of cooperative education programs. Figure 4.5 illustrates the movement of the plotted percentage points for employed respondents who had participated in cooperative education programs. The difference demonstrated between the percentage of completers who had participated in cooperative education programs and those who had not participated was significant for 1978, 1979, and 1981. However, in 1978, significantly more completers participated in cooperative education programs, and in 1981, significantly fewer. As the percentages fluctuated over the four-year period, no discernible trend was demonstrated.

Employed male and female completer participants and nonparticipants of cooperative education programs. Figure 4.6 illustrates the movement of the plotted percentage points for employed male and female respondents who had participated in cooperative education programs and those who had not participated. The percentage of male completers who had participated in such programs decreased by 23.7% from 1978 through 1981. The percentage of male completers who had not participated in cooperative education programs increased. This change can be seen in Figure 4.6 as a successive movement in one direction, which appropriately defines a trend.

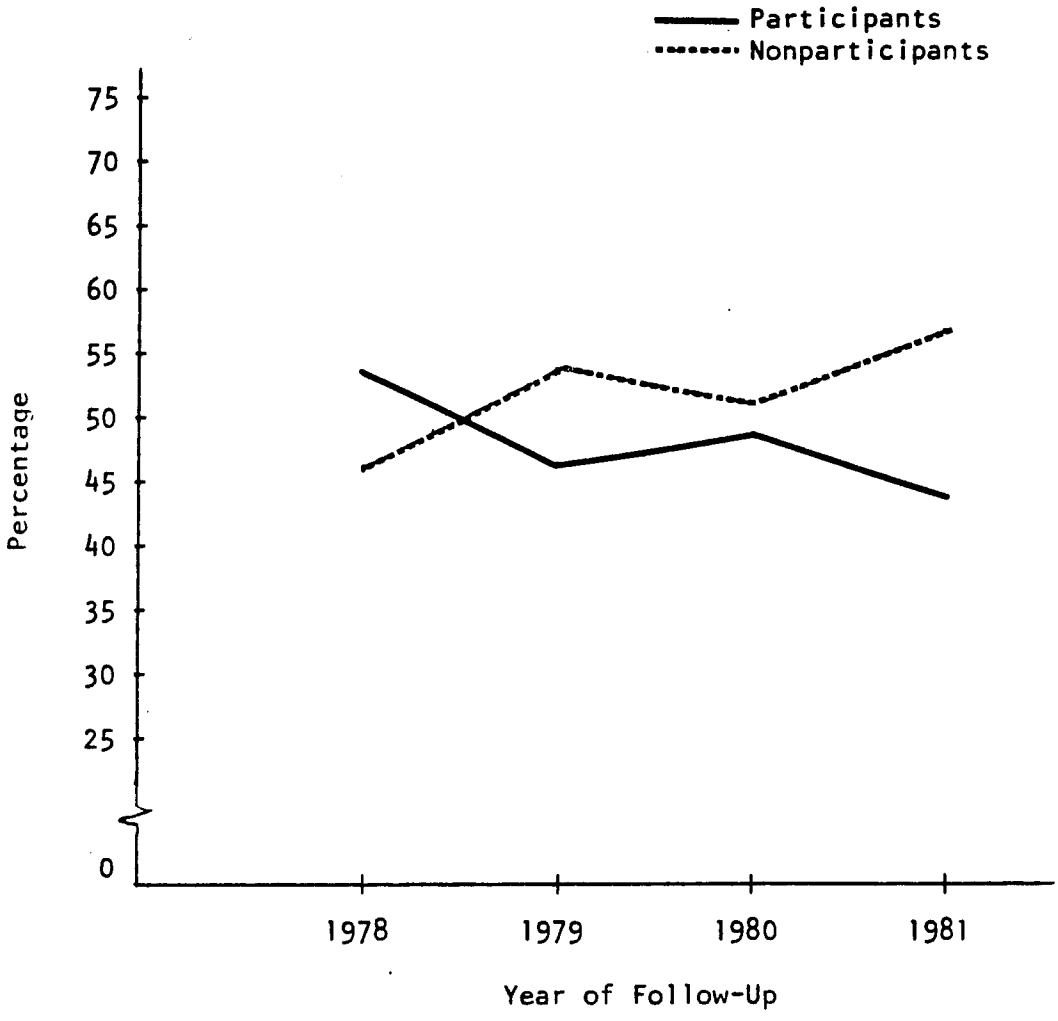

Figure 4.5: Employed completer participants and nonparticipants of cooperative education programs.

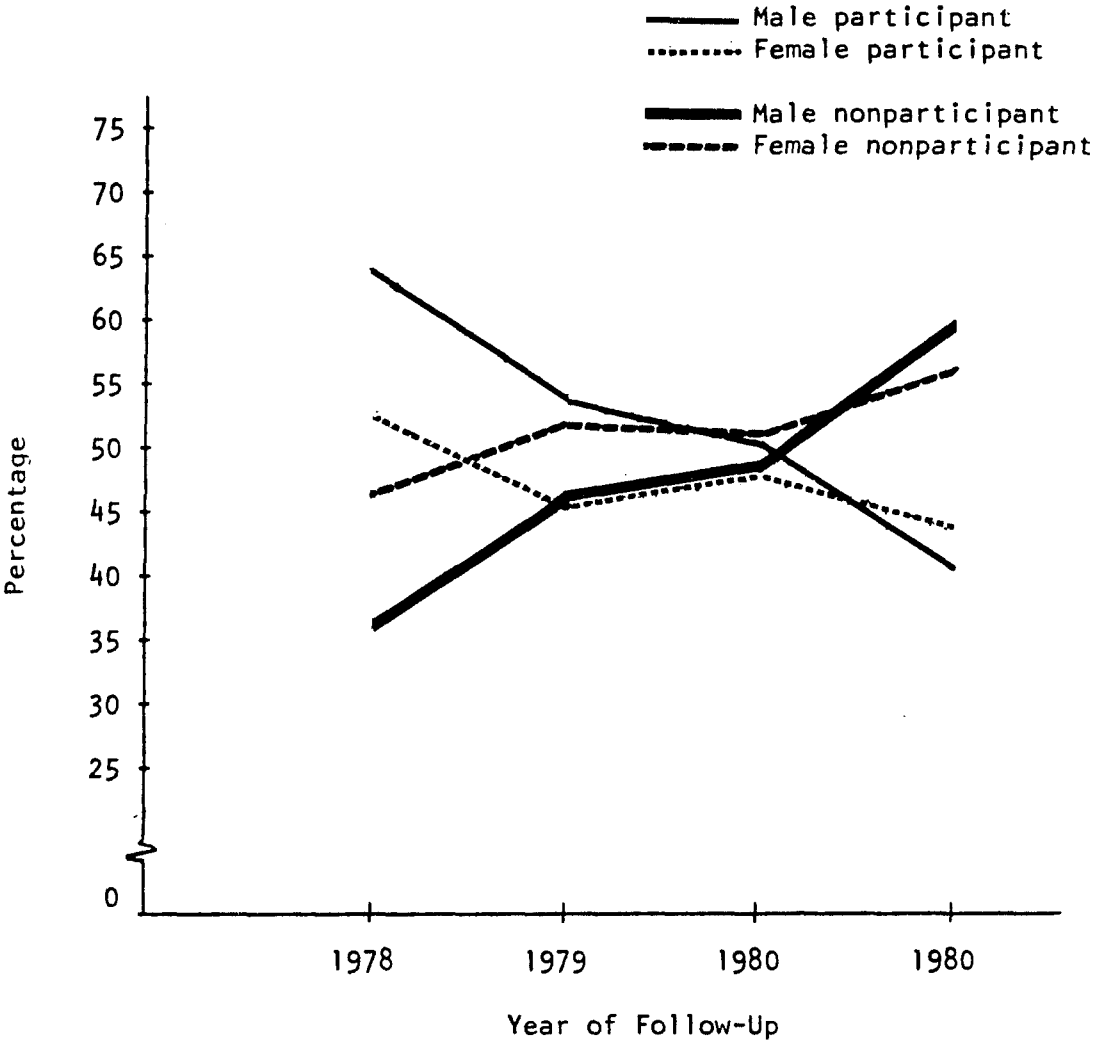

Figure 4.6: Employed male and female completer participants of cooperative education programs.

The movement of percentage points for female completers who had participated in cooperative education programs and those who had not participated was irregular. No trend was discernible for these data.

Participants and nonparticipants of cooperative education programs employed in related jobs. Figure 4.7 illustrates the movement of the plotted percentage points for completers employed in related jobs who had participated in cooperative education programs and those who had not participated. The movement of the percentage points showed considerable fluctuation for each year of the study. The gap between respondents who had participated in cooperative education programs and those who had not participated decreased, increased, and decreased again. No discernible trends were demonstrated for those completers who had participated in a cooperative education program and those who had not.

Male and female completer participants and nonparticipants of cooperative education programs employed in related jobs. Figure 4.8 shows the data from Figure 4.7 plotted with the distribution for male and female completers. The pattern of movement for male completers who had participated in cooperative education programs was irregular over the four years studied. In 1981, 22.4% fewer male completers employed in related occupations had completed cooperative education programs than in 1978. The movement of the plotted percentages for female completers was irregular. No trend was observed for either male or female completers having participated in cooperative education programs and being employed in related jobs.

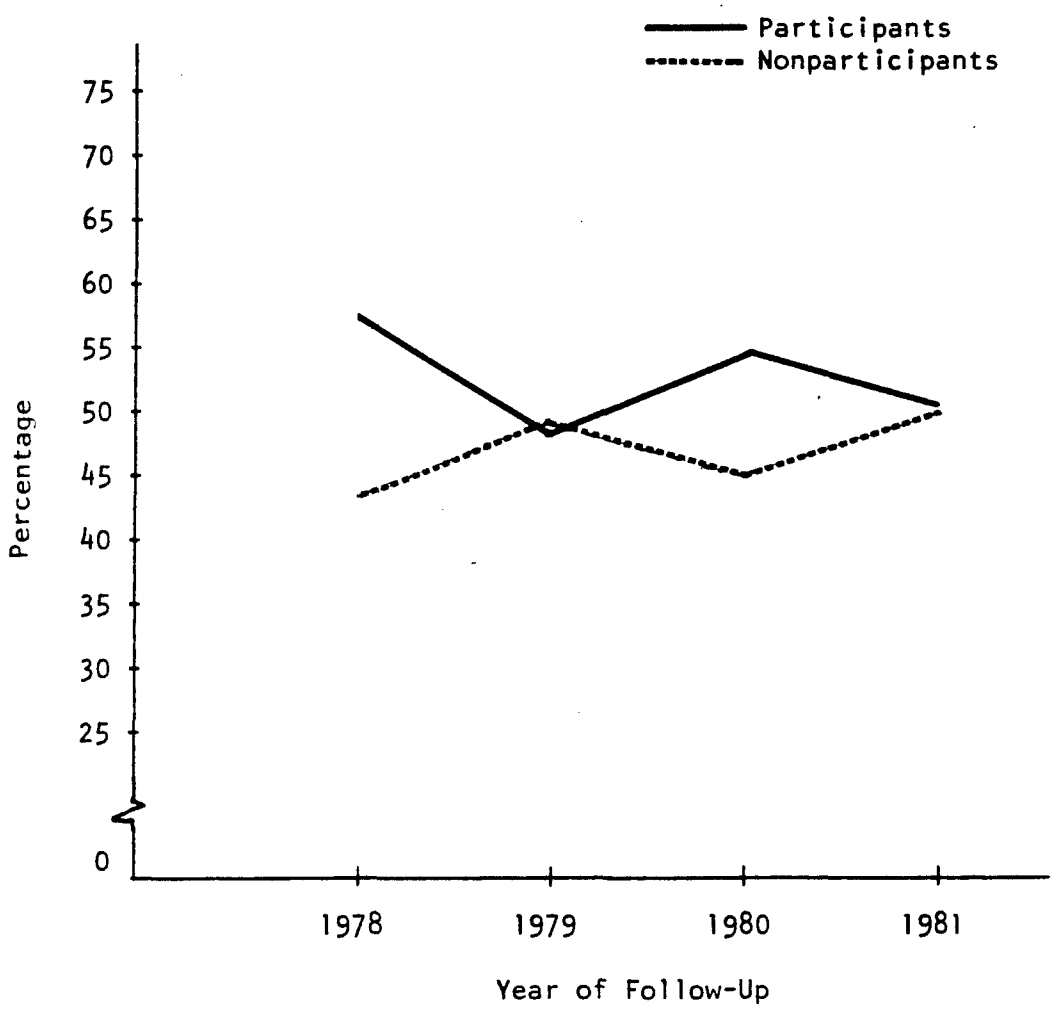

Figure 4.7: Participants and nonparticipants of cooperative education programs employed in related jobs.

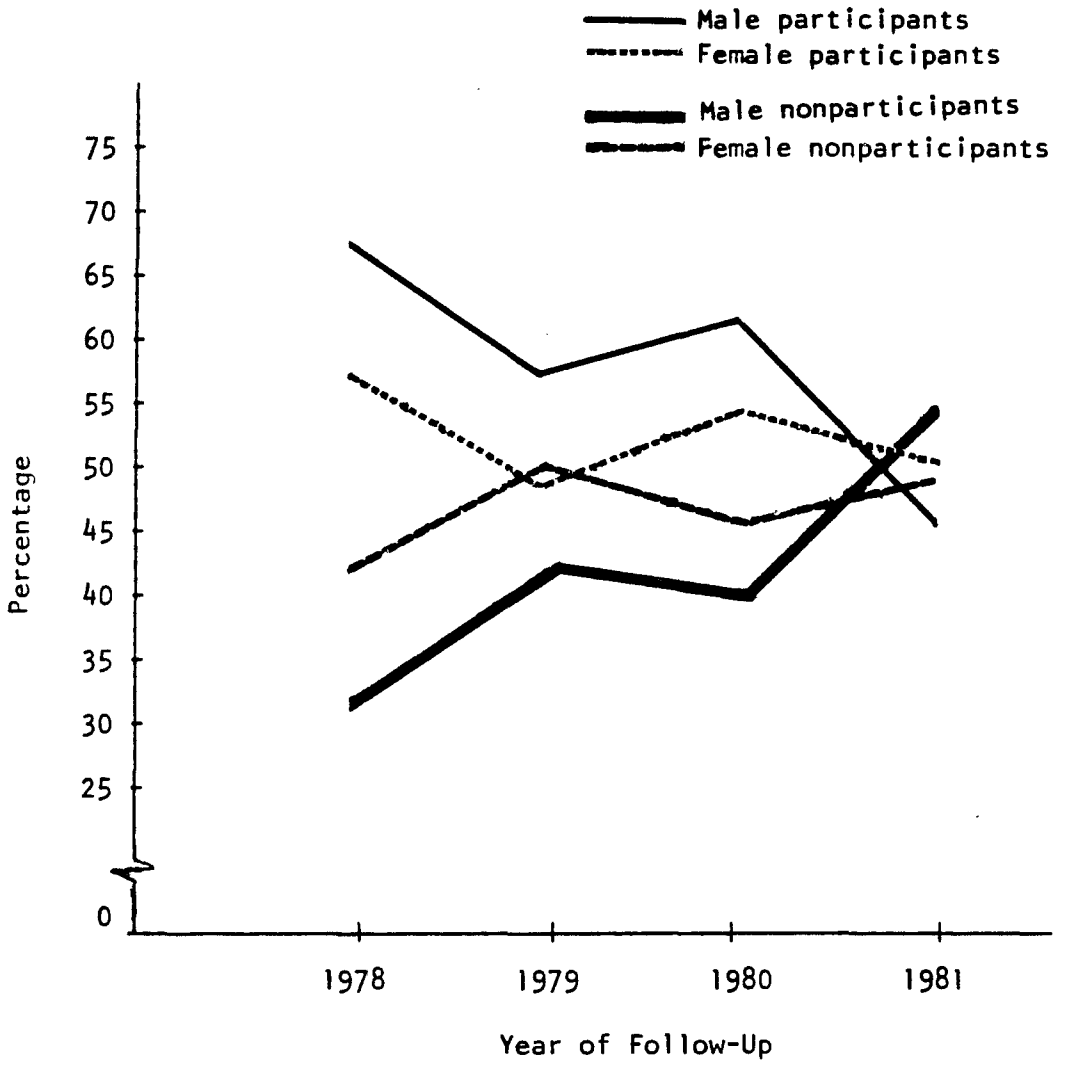

Figure 4.8: Male and female completer participants and non-participants of cooperative education programs employed in related jobs.

Figure 4.8 shows that a greater percentage of male than female completers who held related jobs had participated in cooperative education programs. The total number of male completers was small compared to the number of female completers. Therefore, as seen in Figure 4.7, when the percentages for male and female completers were plotted together, the movement of the plotted percentage points showed little change from the plotted percentages for female participants shown in Figure 4.8.

Participants and nonparticipants of cooperative education programs employed in unrelated jobs. Figure 4.9 illustrates the movement of the plotted percentage points for completers employed in unrelated jobs. From 1978 through 1981, there was a successive decline in the percentage of cooperative education program participants in unrelated jobs. On the other hand, a successively larger percentage of completers who had not participated in cooperative education programs were employed in unrelated jobs. From the plotted points, two discernible trends were demonstrated. Of the number of completers who had participated in cooperative education programs, fewer were employed in unrelated jobs. Of the completers who had not participated in cooperative education programs, successively more were employed in unrelated jobs.

Male and female participants and nonparticipants of cooperative education programs employed in unrelated jobs. Figure 4.10 illustrates the movement of the plotted percentage points for male and female completers employed in unrelated jobs. There were two discernible

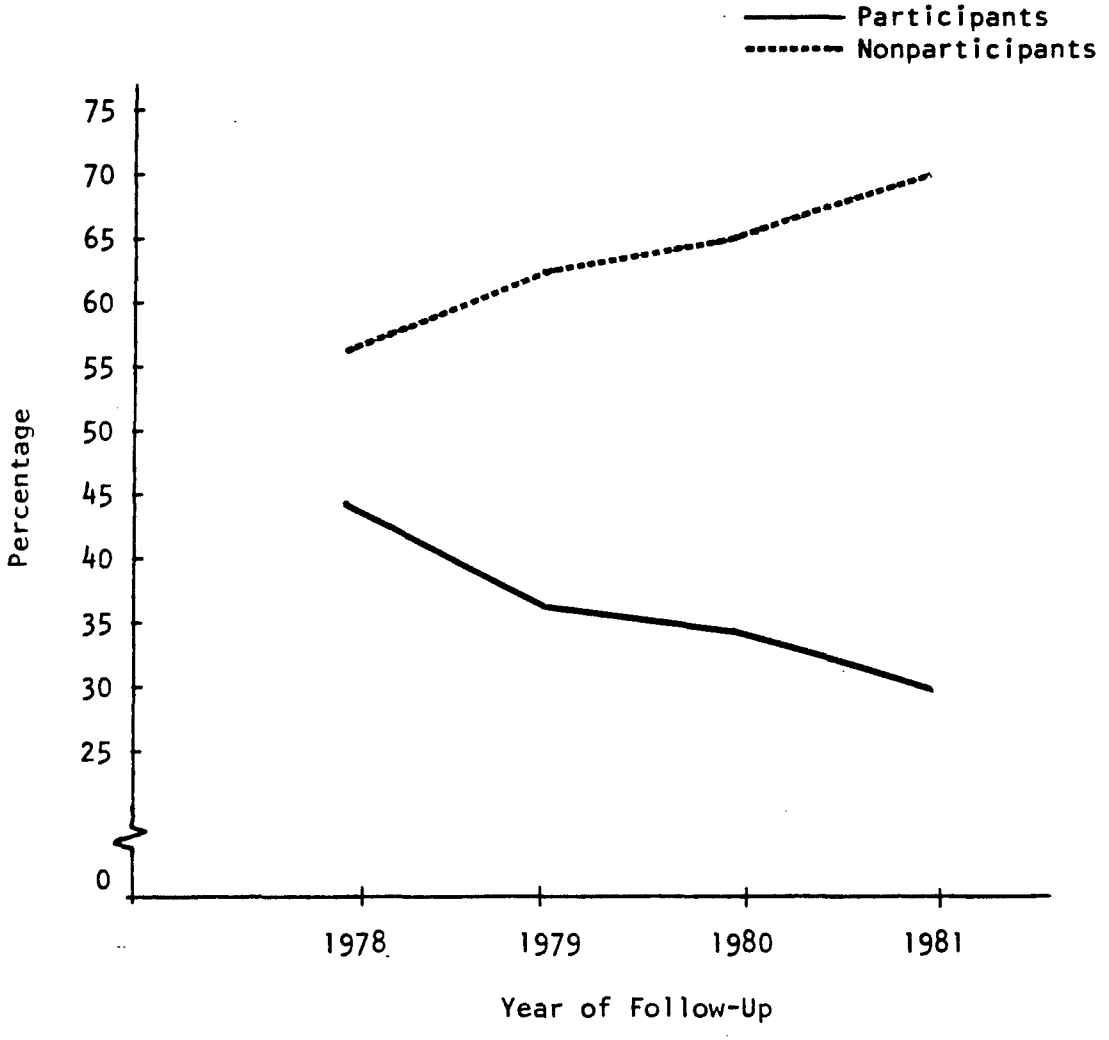

Figure 4.9: Participants and nonparticipants of cooperative education programs employed in unrelated jobs.

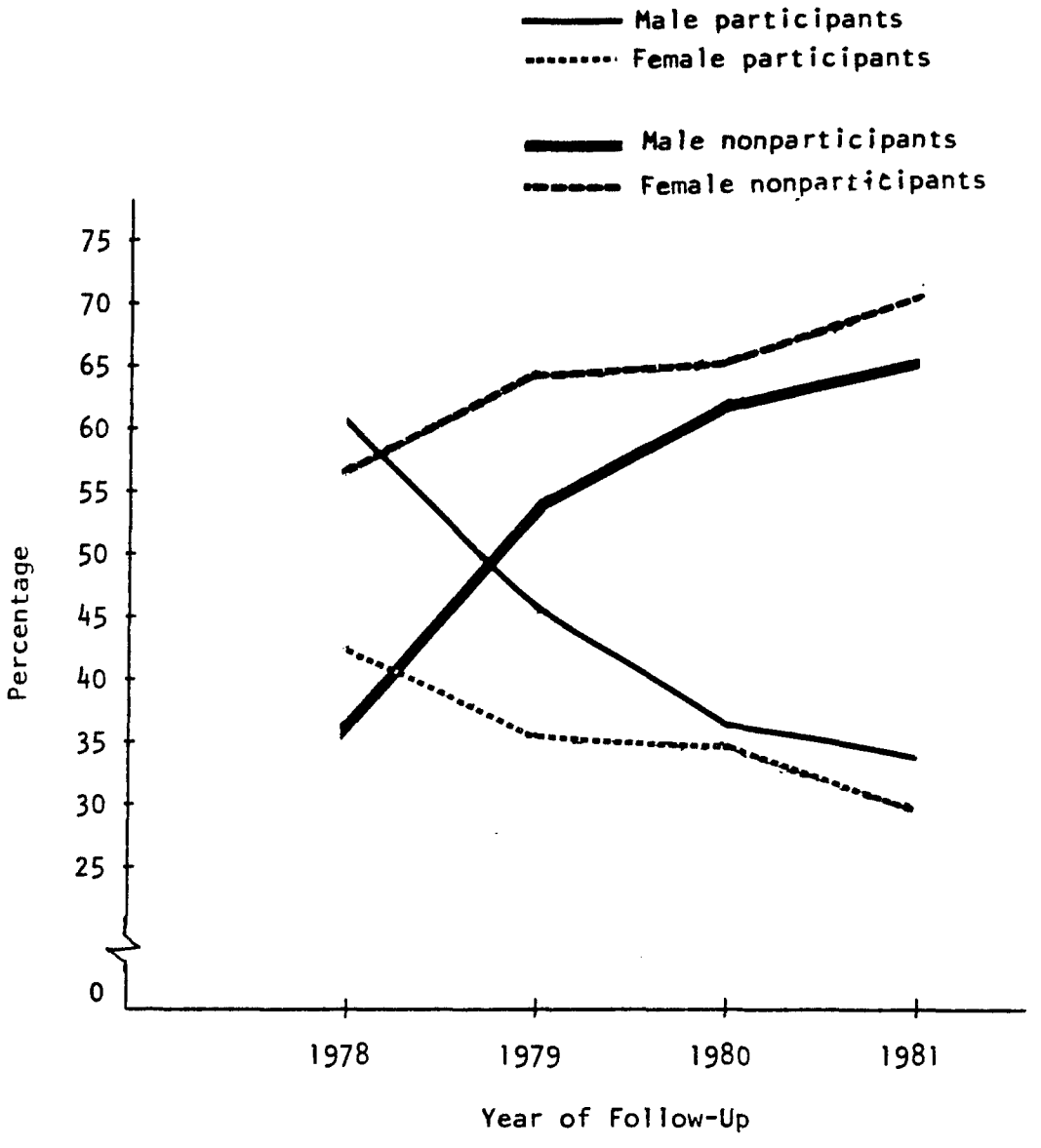

Figure 4.10: Male and female participants and nonparticipants of cooperative education programs employed in unrelated jobs.

trends. One showed successively less unrelated employment for male cooperative education program participants. The other showed successively greater unrelated employment for male completers who had not participated in cooperative education programs.

A trend could also be discerned for female respondents. A successively larger percentage who had not participated in cooperative education programs was employed in unrelated jobs.

Job satisfaction for participants and nonparticipants of cooperative education programs. Figure 4.11 illustrates the movement of the plotted percentage points for the level of job satisfaction for completers who had participated in cooperative education programs and those who had not participated.

For each year studied, completers who had participated in cooperative education programs had a lower mean and thus a higher level of job satisfaction than completers who had not participated in such programs. As shown on the graph, there were some fluctuations in the movement of the mean values for cooperative education participants. No trend was identified for job satisfaction and participation in cooperative education programs.

Completers who had not participated in cooperative education showed a successively greater mean (lower level of job satisfaction) over the four years studied. This finding shows that there was a discernible trend toward less job satisfaction for completers who had not participated in cooperative education programs.

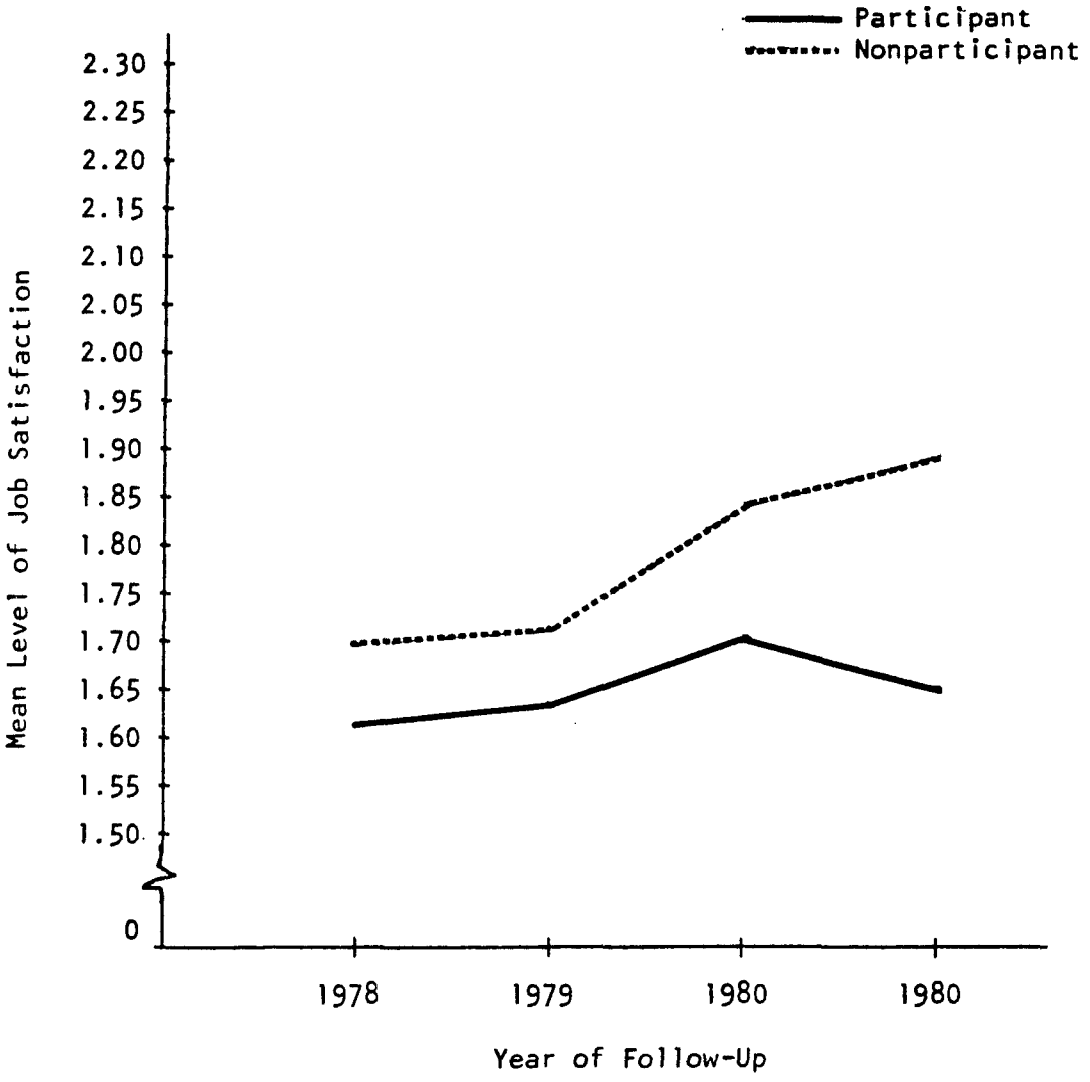

Figure 4.11: Job satisfaction for participants and nonparticipants of cooperative education programs.

Job satisfaction for male and female participants and nonparticipants of cooperative education programs. Figure 4.12 illustrates the movement of the mean level of job satisfaction for male and female completers who had participated in cooperative education programs and those who had not participated, for each year studied.

From 1978 through 1980, participation in cooperative education programs for male respondents showed movement toward less satisfaction and then back to greater satisfaction in 1981. From 1978 through 1980, male completers who had not participated in a cooperative education program showed a marked movement toward less satisfaction but also returned to a greater level of job satisfaction in 1981.

Female completers who had participated in cooperative education programs showed movement toward less satisfaction from 1978 through 1980 and then toward a greater level of job satisfaction in 1981. The mean job-satisfaction levels plotted for the female respondents who had not participated in cooperative education programs moved successively upward. A discernible trend was identified, which demonstrated that female completers of vocational office occupations programs scored lower levels of job satisfaction when they had not participated in cooperative education programs.

Mean wage rates for participants and nonparticipants of cooperative education programs. Figure 4.13 illustrates the movement of the mean wage rates for completers who had participated in cooperative education programs and those who had not participated. For completers who had participated in such programs, the mean wage rate decreased $.50

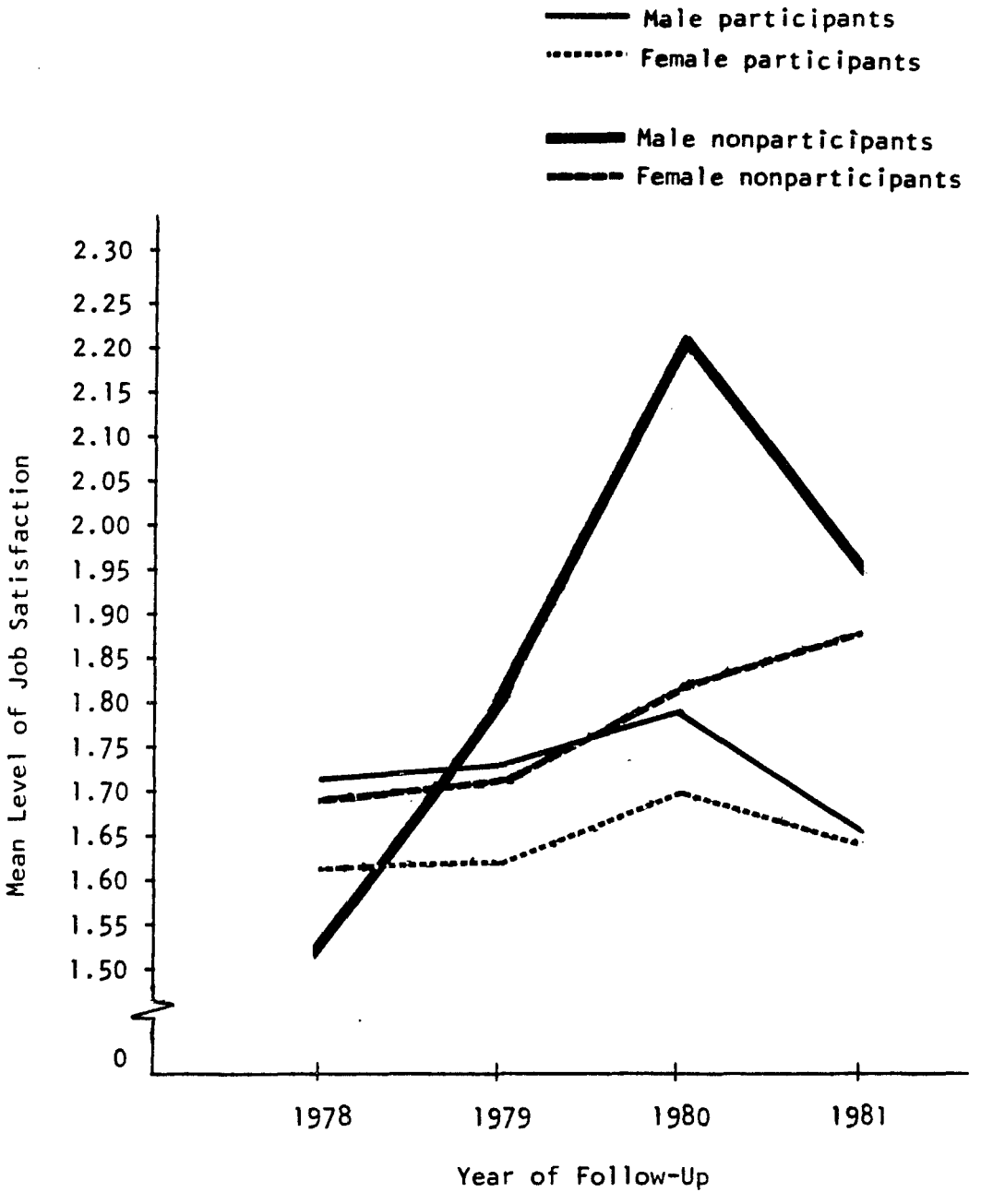

Figure 4.12: Job satisfaction for male and female participants and nonparticipants of cooperative education programs.

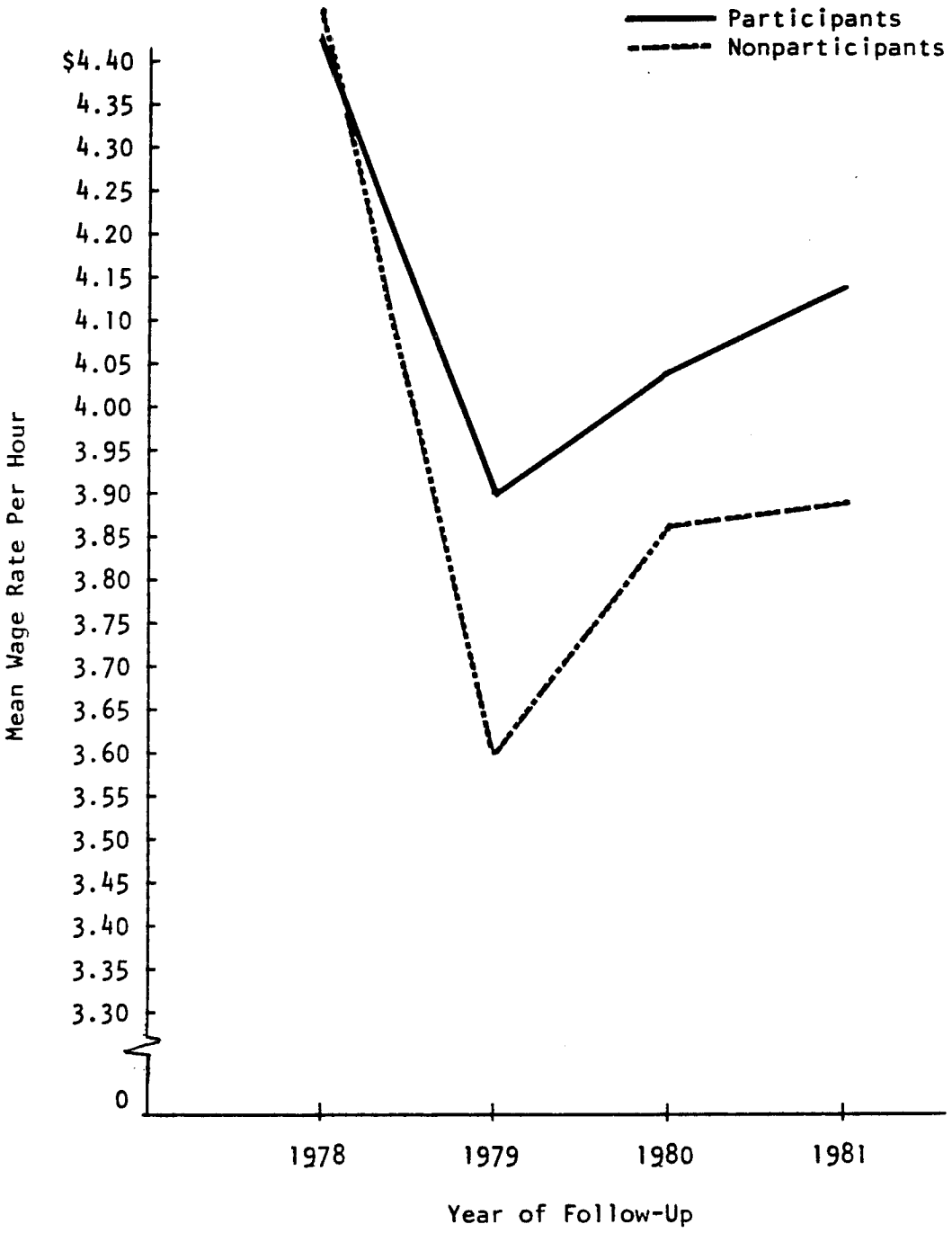

Figure 4.13: Wage rates for participants and nonparticipants of cooperative education programs.

per hour from 1978 to 1979. For the same year, the rate decreased $.86 per hour for completers who had not participated in cooperative education programs. In 1980, the wage rate went up again by $.64 and $.24, respectively, for completers who had participated in cooperative education programs and those who had not. In 1981, there was another increase in the mean hourly wage: $.10 and $.02, respectively, for completers who had participated in cooperative education programs and those who had not. Although the mean wage rate appeared to increase from 1980 to 1981 for both participants and nonparticipants, the movement of wages over the four years studied was not successive, and no trends were observed.

Mean wage rates for male and female participants and nonparticipants of cooperative education programs. Figure 4.14 illustrates the movement of the mean wage rates for male and female completers who had participated in cooperative education programs and those who had not. Mean wage rates for male cooperative education participants decreased considerably in 1979 and then continued to decrease in 1980 and again in 1981. The movement of the plotted wage points was successively downward. There was a discernible trend for wages of male completers who had participated in cooperative education programs. Wages for male completers who had not participated in cooperative education programs decreased, increased, and then decreased again. No trend was observed for these respondents.

Wages for female participants in cooperative education programs decreased in 1979; they increased in 1980 and again in 1981. For

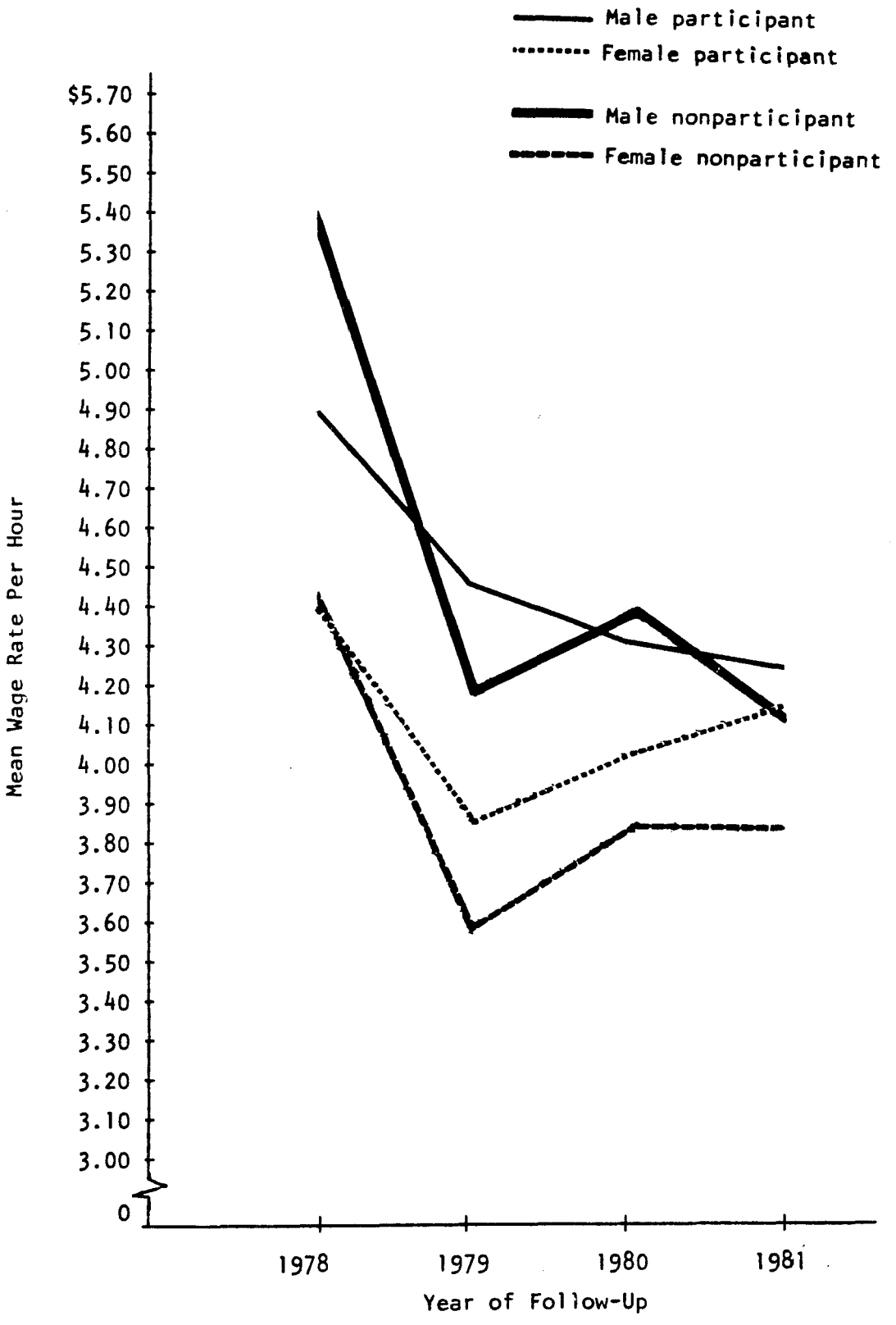

Figure 4.14: Wage rates for male and female participants and nonparticipants of cooperative education programs.

female completers who had not participated in cooperative education programs, wages decreased in 1979, recovered somewhat in 1980, and then leveled off with a slight decrease in 1981. No trends were observed for female completers and wage rates over the four years studied.

Summary

The purpose of this chapter was to report the findings of the analyses of the relationship of selected variables of related employment, job satisfaction, and mean wage rate for male and female completers of secondary vocational office occupations training to participation in cooperative education programs. The results of the analysis can most conveniently be observed by examining the graphs for Hypothesis 17. (See pages 91 through 107.) The number of participants employed at the time of the survey decreased over the years studied. This did not change when employed respondents were designated by gender. Of those who were employed, participants appeared to have a higher rate of related employment except in 1979, when it was about the same as for nonparticipants. When designated by gender, related employment for female respondents fluctuated but remained within a few percentage points over the years studied. Conversely, the related employment status for male participants declined over the same period. Both male and female participants showed progressively less unrelated employment over the years studied.

Job satisfaction remained higher for participants than nonparticipants, and when examined for gender, the pattern was much the same,

with an increase in job satisfaction for cooperative education participants over the years studied.

Wage rates declined for all completers over the years studied. Wages for female participants remained above those of female nonparticipants. Wages for male participants, however, were alternately higher and lower than those of male nonparticipants. Over the four years studied, male participants and nonparticipants received higher wages than female participants or nonparticipants. An exception was 1981, when female participants received a mean wage per hour just slightly higher than that of male nonparticipant completers.

Chapter V contains a restatement of the research questions and hypotheses, a summary of the findings, conclusions, and recommendations for further research.

CHAPTER V

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Introduction

The purpose of this study was to investigate the relationship of participation in cooperative education programs and the variables of related employment, job satisfaction, and wages for employed male and female completers of secondary vocational office occupations programs. An additional aspect of this study was to examine consistency between male and female completers for the variables studied. Through the use of line graphs, discernible trends that might exist for participation in cooperative education and the variables studied were described.

A review of related literature included reported findings of studies concerning attributes and benefits of cooperative education, and the variables of related employment, job satisfaction, and wage rates.

The data for this study were collected as part of the Michigan Education Department's annual follow-up survey conducted by the Vocational-Technical Education Service from 1978 through 1981. Survey procedures were directed and supervised by the Vocational-Technical Education Service. The survey issue and return were administered by the local school districts. The data tapes containing the outcomes of

the annual follow-up surveys were transferred by special permission to an approved agency, which reviewed the tapes to reveal the data for this research. The Statistical Package for the Social Sciences was used to analyze these data. Chapter IV contained tables and graphs that represented the significant relationships observed for each null hypothesis. Chapter V contains a restatement of the research questions and hypotheses, a summary of the findings, conclusions, recommendations, and recommendations for further research.

The Findings

A report of the findings of the present study is presented in this section. These findings are reported in order of the research questions and the corresponding null hypotheses.

Research Question 1. Did office occupations completers who participated in cooperative education programs and who were employed one year after completion more often have jobs related to their training than those who did not participate in cooperative education programs?

Null hypotheses derived from this question were:

Ho 1: There is no significant difference between the number of secondary office occupations completers who are employed and have participated in cooperative education programs and those who have not.

Ho 2: There is no significant difference in the percentage of employed male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 4: There is no significant difference in the percentage of secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 5: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in related jobs and have participated in cooperative education programs and those who have not.

Ho 7: There is no significant difference in the percentage of secondary vocational office occupations completers employed in unrelated jobs who have participated in cooperative education programs and those who have not.

Ho 8: There is no significant difference in the percentage of male and female secondary vocational office occupations completers who are employed in unrelated jobs and have participated in cooperative education programs and those who have not.

The relationship between participation in cooperative education and employment was significant for 1978 completers. For 1979, there were fewer participants employed in related jobs than nonparticipants; however, the difference was not significant. For 1980 and 1981, significantly more participants held related jobs than nonparticipants. The number of male participants in cooperative education programs decreased by approximately 13% over the four years studied. Female participation decreased approximately 10%.

The number of cooperative education participants employed in related jobs decreased, increased, and decreased again, but it remained above the number of participants employed in unrelated jobs in all years except 1979. The difference was significant for 1978 and 1980. The number of male participants in related jobs increased approximately 22% over the four-year period, and the number of female participants decreased by approximately 6%. Differences were significant for 1978

and 1980 only. In each of the years studied, the number of completers employed in unrelated jobs who had participated in cooperative education programs decreased and was significantly less than the number of nonparticipants for each year studied.

Research Question 2. Did employed office occupations completers who participated in cooperative education programs indicate greater job satisfaction than those who did not participate in cooperative education programs?

The null hypotheses for this research question were:

Ho 10: There is no significant difference in the mean level of job satisfaction between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 11: There is no significant difference in the level of job satisfaction between male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Both male and female participants showed a decrease in level of job satisfaction for 1979 and 1980, and an increase in 1981. Nonparticipants showed a greater decrease in level of job satisfaction than participants in 1979 and 1980. Although male nonparticipants demonstrated some increase in level of job satisfaction in 1981, female nonparticipants rated job satisfaction lower in 1981 than for any year studied. Female participants showed greater job satisfaction than male participants for each year studied. The outcome of the job-satisfaction variable for this study was similar to outcomes reported by Middleton (1975), Stormsdorfer (1973), and Slick and Welch (1974), that is, that there was a significant and positive relationship between

participation in cooperative education programs and level of job satisfaction.

Research Question 3. Did employed office occupations completers who participated in cooperative education programs receive higher mean wages than completers who did not participate in cooperative education programs?

The null hypotheses for this question were:

Ho 13: There is no significant difference in mean wage rates between secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 14: There is no significant difference in mean wage rates between male and female secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Except in 1978, when the difference was not significant, completers who had participated in cooperative education had higher mean wage rates than nonparticipants. Although the mean wage rate for male participants declined, as was found by Rowe (1980) and Breglio (1976), male cooperative education program participants earned more than female participants. Male nonparticipants earned more than female participants and nonparticipants except in 1981, when, as Rowe (1980) found, wages for female participants were closer to those of male nonparticipants. Although wages for male participants remained higher than those for female participants in each year studied, the difference was not significant for any of the years studied. Female participants did receive significantly higher wages than female nonparticipants,

except in 1978 when wages for participants and nonparticipants were nearly the same.

Research Question 4. Was there a difference between male and female completers with respect to related employment, job satisfaction, and mean wage rates for those who had participated in cooperative education programs and those who had not?

The hypotheses for this question were:

Ho 3: There is no significant interaction between percentage of participation in cooperative education programs and gender of secondary vocational office occupations completers.

Ho 6: There is no significant interaction between related employment and gender of secondary vocational office education completers who have participated in cooperative education programs and those who have not.

Ho 9: There is no significant interaction between unrelated employment and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

Ho 12: There is no significant interaction between levels of job satisfaction of secondary vocational office occupations completers who have participated in cooperative education and those who have not.

Ho 15: There is no significant interaction between mean wage rate and gender of secondary vocational office occupations completers who have participated in cooperative education programs and those who have not.

The interaction between male and female completers was examined to determine whether gender was significantly related to the dependent variables. The interaction was measured by the chi-square value for participation in cooperative education and related employment, and by the F-value for job satisfaction and wage rate.

The interaction for participation in cooperative education programs was significant for 1978, indicating that gender was probably a good indicator of whether or not respondents had participated in cooperative education programs. That is, the percentage of completers who had participated was more than 50% in 1978; therefore, the chance that a male or female completer had participated in cooperative education programs was greater than the chance that a male or female had not participated in such programs. There was no significant difference for 1979, 1980, or 1981, which demonstrated that gender was not significant with respect to participation in cooperative education.

The interaction for related employment was not significant by the chi-square value for any of the years studied. Therefore, gender did not relate to having obtained a related job. The outcome for unrelated jobs showed that a significant difference did occur in 1978, but for 1979, 1980, and 1981, being male or female and having participated in cooperative education programs made no difference in being employed in an unrelated job.

The interaction in levels of job satisfaction showed that even though female participants indicated greater job satisfaction, gender was not a significant factor in job satisfaction.

Although male completers received higher wages in each of the years studied, the interaction as measured by the F-value was not significant. Therefore, gender was not a determining factor of wage rate.

Research Question 5. Was there consistency between employed male and female completers with respect to related employment, job satisfaction, and wage rate over the four years studied? (This question does not have the cooperative education distinction.)

Hypothesis 16 was derived from this question. It stated:

Ho 16: There is no consistency in the levels of related employment, job satisfaction, and mean wage rate for male and female secondary vocational office occupations completers. (This hypothesis does not include the cooperative education distinction.)

Consistency is best seen by examining Figures 4.1 through 4.3, which show the movement of the variables for consistency between male and female completers. Fewer respondents were employed in related jobs in 1981 than in 1978. Fewer female completers were employed in related jobs in 1981 than in 1978, but there were more female than male completers in related jobs in 1981. No consistency was demonstrated for this variable.

The mean level of job satisfaction for male completers decreased from 1978 to 1980 and then increased in 1981. Female completers demonstrated a continual decrease in job satisfaction over the years studied. Female completers had a higher level of job satisfaction than male completers for each year studied. No consistency was demonstrated in the deviations from the mean for job satisfaction.

Wage rates for male participants decreased considerably from 1978 to 1979, and continued to decrease through 1981. Wage rates for female completers also decreased in 1979, but increased again in 1980

and 1981. For all years, male completers received higher wages than female completers. The mean deviations, however, were not significant for a condition of consistency.

Research Question 6. Were there discernible trends for each of these variables over the four-year period from 1978 through 1981?

The hypothesis related to this question was:

Ho 17: There are no discernible trends for related employment, job satisfaction, or mean wage rate for male and female secondary vocational office occupations completers who have participated in cooperative education programs and those who have not, over the four years included in this study.

The trends that may be discerned from this study can best be observed by referring to Figures 4.4 through 4.14, provided as part of the testing of Hypothesis 16 in Chapter IV. However, the following paragraphs provide a review of the variables and the trends that were demonstrated.

The number of completers who were employed was successively less from 1978 through 1981. Because of this movement, a trend toward increasing unemployment was discerned.

For completers who had participated in cooperative education, a similar pattern took place, with the exception of 1980, when the number employed increased. No trend was discovered for employment and participation in cooperative education.

Male completer participants experienced a continued decrease in employment. Each year showed successively less employment; however, the percentage of the decrease varied each year. A trend toward decreased employment for male cooperative education program

participants was discerned. Another trend was evident as well. There was a successive increase in employment for nonparticipant male completers. The pattern for female completers did not deviate much from the male patterns but fluctuated in a nonsuccessive manner. This movement did not demonstrate a trend.

A similar fluctuation was demonstrated for completers employed in related jobs, and no trend could be discerned. The pattern for related employment did not change very much when examined according to male and female completers. No trend could be discerned.

The movement of participants in unrelated jobs was successively downward. A dual trend was identified as participants had fewer unrelated jobs and nonparticipants more often had unrelated jobs. The direction and shape of the trend line did not change appreciably when completers in unrelated employment were identified as male and female. Both male and female nonparticipant completers showed increased unrelated employment over the four years studied.

Nonparticipant completers showed a decreasing level of job satisfaction. The movement, although varied, was successive; therefore, a trend could be discerned. No trend was evident for the job-satisfaction level of participants. When job satisfaction was identified by male and female participants and nonparticipants, it was demonstrated that job satisfaction decreased successively for female nonparticipants.

No trend could be discerned for mean wage rates of participant and nonparticipant completers because the movement over the four years

was very irregular. When wage rates were identified by male and female, only male participants showed the successive movement necessary to determine a trend; in this instance, the trend was downward. Male and female nonparticipants' mean wage rates were erratic. Although no trend could be discerned, male and female participants' wages appeared to be moving upward.

Conclusions

The findings of this study led to the following conclusions with respect to the specific variables considered.

Although the number of participants decreased from 53.7% in 1978 to 43.4% in 1981, secondary vocational office occupations program completers in Michigan, who had participated in cooperative education programs over the years of this study, fared better than nonparticipants with respect to related employment, job satisfaction, and wages. Therefore, participation in cooperative education programs appears to have contributed to vocational office occupations participants finding related jobs, being satisfied with the job, and receiving higher wages.

For secondary vocational office occupations program completers in Michigan, the number employed decreased over the years studied. Based on these data, participation in cooperative education programs may not have contributed to employment, as more nonparticipants held jobs. However, participation in cooperative education programs may have contributed to related employment, as, of those participants who were employed, a greater percentage had related jobs than nonparticipants who were employed. When economic conditions were poor, in order

to be employed, nonparticipants may have been more willing to take jobs not related to the training they had received.

For secondary vocational office occupations program completers in Michigan, when a greater number of completers were employed, male participants, over the years studied, held related jobs more often than female participants. However, when fewer completers were employed, male participants were less likely to be employed in related jobs than female participants. It appears that male participants more frequently than female participants were willing to work in unrelated jobs, or that employers were more willing to hire males in jobs unrelated to training.

For secondary vocational office occupations program completers in Michigan, participation in cooperative education programs, over the years studied, contributed to more positive job-satisfaction ratings for participants than for nonparticipants. Female participants reported higher levels of job satisfaction than male participants. Participants reported a higher rate of job satisfaction than did nonparticipants. Based on the above, it appears that participation in cooperative education programs contributed to a higher level of job satisfaction.

For secondary vocational office occupations program completers in Michigan, participants in cooperative education programs, over the years studied, received higher wages than nonparticipants. Based on these data, participation in cooperative education programs appears to have contributed to participants receiving higher wages than

nonparticipants. It was also found that male participants received higher wages than female participants despite the fact that vocational office occupations is a traditionally female occupation. It can be concluded that an inequity exists for female completers even in a traditional occupation.

General Recommendations

From the findings of the data analyses for this study and from the evidence provided in the related literature, it appears that some advantages may accrue to students who participate in cooperative education programs as part of their vocational office occupations training. Based on the findings of this research study and the resulting conclusions, the following recommendations seem appropriate for vocational office occupations students, program directors, and prospective employers.

1. Vocational office occupations students should be encouraged to participate in cooperative education programs. The benefits are evident. Students should have the opportunity to obtain jobs for which they are trained; they should be able to develop potential for greater job satisfaction and an equitable wage.

2. Vocational office occupations program directors should make efforts to have cooperative education programs available to those wishing to participate.

3. Potential employers should be encouraged to participate in cooperative education programs. Benefits for business and community

have been documented by Wanat and Snell (1980), Murphy (1980), and others.

Recommendations for Further Research

Trend analysis and follow-up studies should be a continuing effort in the process of building and improving vocational programs. As the data for this study were plotted on graphs to show movement of the variables over time, it was demonstrated that fluctuations occurred during the four years studied. Changes in numbers of completers who had participated in cooperative education programs, the number employed in related jobs, fluctuations in job satisfaction, and wage rates all indicated that there may be intervening variables that might be worth examining. The following areas are recommended for further research.

1. The analysis of this study should be extended as additional data become available, in order to discern the continuation or termination of trends that were identified in this study.

2. Similar analysis of follow-up data for vocational office occupations completers should be done for follow-up data from other states in order to compare similarities and differences in wage rates, job satisfaction, or other selected variables related to participation in cooperative education programs.

3. State and national economic effects on vocational office occupations cooperative education programs during the years studied, as well as other years, should be examined.

4. The relationship between legislation and state funding support for vocational office occupations cooperative education

programs and the variations in outcomes revealed in this study should be investigated.

5. Coordinator load should be evaluated as a factor relating to participation in cooperative education programs. Coordinator load might also be evaluated relevant to job-satisfaction ratings of participants.

6. Being able to determine how many students have related jobs is a relevant finding, but it would also be of value to know how many participants remained in their cooperative job after they completed their vocational training. Evans (1978) reported that this factor helped bring related employment of one group studied to as high as 80%.

Reflections

For those who have directed their time and efforts toward the operation and success of cooperative education programs, the findings of this study should be generally encouraging. Although there is much that can and should be done to improve programs and outcomes, cooperative education programs provide worthwhile benefits to those who participate in them.

APPENDIX

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(Page 3)

PART 3 — UNEMPLOYED — SEEKING WORK

*10. Whom have you asked for help in finding a job?
(Check ALL that apply.)

46 ☐ 1 High school or area vocational education center counselor
47 ☐ 1 Teacher or co-op coordinator
48 ☐ 1 Parent, other relative or friend
49 ☐ 1 High school or area vocational education center placement office
50 ☐ 1 Public employment agency
51 ☐ 1 Private employment agency
52 ☐ 1 College placement office
53 ☐ 1 Other (please specify) _____
54 ☐ 1 *None of the above*

IF YOU ARE NOW ATTENDING SCHOOL OR ARE ENROLLED IN A TRAINING OR APPRENTICESHIP PROGRAM, PLEASE COMPLETE PART 4 OF THE SURVEY. OTHERWISE, GO DIRECTLY TO PART 5 — COMMENTS.

PART 4 — FURTHER EDUCATION

Name of School, Training or Apprentice Program	City	State

11. Check the type of school or program you are now attending.
(Check ONE only.)

55 ☐ 1 2 year college (vocational-technical training program)
☐ 2 2 year college (liberal arts program)
☐ 3 4 year college or university
☐ 4 Business or trade school
☐ 5 Apprentice Program
☐ 6 Other (please specify.) _____

12. *My major area of study (or training) is* _____

13. In your major area of study (or training), how much do you use the vocational training you received in high school or area vocational education center?
(Check ONE only.)

56 ☐ 1 *A lot*
☐ 2 Some
☐ 3 Hardly any
☐ 4 None

14. Check all who assisted you in finding and/or getting into your present educational or training program.
(Check ALL that apply.)

57 ☐ 1 High school or area vocational education center counselor
58 ☐ 1 Teacher or co-op coordinator
59 ☐ 1 Parent, other relative or friend
60 ☐ 1 High school or area vocational education center placement office
61 ☐ 1 Training or apprentice program recruiter
62 ☐ 1 Other (please specify) _____
63 ☐ 1 No one but myself

ANY COMMENTS OR SUGGESTIONS YOU MAY HAVE CAN BE WRITTEN IN PART 5. (INCLUDE ANY TYPE OF ASSISTANCE YOU MIGHT NEED NOW AND LIST THE TYPES OF ASSISTANCE OR PROGRAMS YOU HAD IN YOUR SCHOOL THAT WERE MOST BENEFICIAL TO YOU.)

Michigan Department of Education

SCHOOL DISTRICT LABEL

1979 FOLLOW-UP SURVEY

By answering the following questions you can help us plan better educational programs. We will use the information you give us for educational purposes only. Thank you for your cooperation and assistance in completing this survey.

Please answer the items in this survey by placing an "X" in the box next to the response OF YOUR CHOICE.

PART 1

QUESTIONS	YOUR ANSWERS
1. Check ALL answers that apply to you.	15 ☐ I am now employed. I work about _____ hours per week. (16) 18 ☐ I am *unemployed*. 19 ☐ I am looking for a job. ☐ I am not looking for a job. 20 ☐ I am a full-time student. ☐ I am a part-time student. 21 ☐ I am a homemaker. (Not working for wages.) 22 ☐ I am in the military service.
2. Check the word that best describes how well your high school courses (and any area center vocational courses that you took) prepared you to do what you are doing now. (Check only ONE.)	23 ☐ Excellent ☐ Good ☐ Fair ☐ Poor
3. Sex:	24 ☐ Male ☐ Female
4. Please identify yourself as a member of one of the groups of people listed to the right. (Check only ONE.)	25 ☐ American Indian or Alaskan Native ☐ Asian or Pacific Islander ☐ Black, not of Hispanic Origin ☐ Hispanic ☐ White, not of Hispanic Origin
5. During the 1978-79 school year, were you a member of any of the following student organizations? Business Office Education Clubs (BOEC) Distributive Education Clubs of America (DECA) Future Farmers of America (FFA) Future Homemakers of America (FHA) Home Economics Related Occupations (HERO) Vocational Industrial Clubs of America (VICA)	26 ☐ Yes ☐ No

If you are employed full-time or part-time now, or if you are in the military, please answer all the questions in Part 2.
If you are not working and are looking for a job, go directly to Part 3.
If you are a part-time or full-time student who is not working or looking for a job, go directly to Part 4.

PART 2 EMPLOYED

Answer these questions ONLY if you are working full-time or part-time.

Please fill in the name of the company where you work — or branch of the military		
Company's Street Address	City	State
Please fill in the name of your job (47)	LEAVE BLANK (31)	
Please list the three most important things you do on your job: 1.		
2.	3.	

QUESTIONS	YOUR ANSWERS
6. On your present job, how much do you use the vocational training you received in your high school or area vocational education center? (Check only ONE.)	(36) [1] A lot [2] Some [3] Hardly any [4] None
7. Overall, how satisfied are you with your present job? (Check only ONE.)	(37) [1] Very satisfied [2] Somewhat satisfied [3] Not very satisfied [4] Not at all satisfied
8. On my present job I am paid about $ _____ (38) per hour.	
9. In addition to training you, what did your High School or Area Vocational Center do to help you find a job? (Check ALL that apply.)	(42) [1] Told me about job openings (43) [1] Sent me for an interview (44) [1] Taught me to fill out a job application (45) [1] Gave information about me to my employer (46) [1] Other (Please specify) _____ (47) [1] None of the above
10. Who helped you find a job? (Check ALL that apply.)	(48) [1] High school or area vocational center counselor (49) [1] Teacher or co-op coordinator (50) [1] Parent, other relative or friend (51) [1] High school or area vocational education center placement office (52) [1] Public employment agency (For example, MESC-Michigan Employment Security Commission & CETA Youth Services.) (53) [1] Private employment agency (54) [1] College placement office (55) [1] Other (Please specify) _____ (56) [1] No one but myself

If you are now attending a school or college, or are enrolled in a training program, please answer the questions in Part 4. If you are not attending a school or college, and are not enrolled in a training or apprenticeship program, please turn to Part 5.

PART 3 UNEMPLOYED — LOOKING FOR WORK

Answer this question ONLY if you are not working and are looking for a job.

QUESTION	YOUR ANSWER
11. Whom have you asked for help in finding a job? (Check ALL that apply.)	57 ☐ High school or area vocational education center counselor 58 ☐ Teacher or co-op coordinator 59 ☐ Parent, other relative or friend 60 ☐ High school or area vocational education center placement office 61 ☐ Public employment agency (For example, MESC-Michigan Employment Security Commission & CETA Youth Services.) 62 ☐ Private employment agency 63 ☐ College placement office 64 ☐ Other (Please specify) _____ 65 ☐ None of the above

If you are now attending a school or college, or are enrolled in a training or apprenticeship program, please answer the questions in Part 4 on this page. If you are not working and not attending a school or college, or enrolled in a training or apprenticeship program, please turn to Part 5.

PART 4 EDUCATION

Complete Part 4 ONLY if you are now attending a school or college, or are enrolled in a training or apprenticeship program.

Please fill in the name of your School, College, Training or Apprentice Program	City	State

QUESTIONS	YOUR ANSWERS
12. Check the type of school or program you are now attending. (Check only ONE.)	66 ☐ High school ☐ 1-year college vocational-technical program ☐ 2-year college vocational-technical program ☐ 2-year college liberal arts program ☐ 4-year college or university ☐ Business or trade school ☐ Apprentice Program ☐ Other (Please specify) _____
13. My major area of study (or training) is _____	
14. In your major area of study (or training), how much do you use the vocational training you received in your high school or area vocational education center? (Check only ONE.)	67 ☐ A lot ☐ Some ☐ Hardly any ☐ None
15. Check all who assisted you in finding and/or getting into your present educational or training program. (Check ALL that apply.)	68 ☐ High school or area vocational education center counselor 69 ☐ Teacher or co-op coordinator 70 ☐ Parent, other relative or friend 71 ☐ High school or area vocational education center placement office 72 ☐ Training or apprentice program recruiter 73 ☐ Other (Please specify) _____ 74 ☐ No one but myself

Please turn to Part 5

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Michigan Department of Education

SCHOOL DISTRICT LABEL

FOLLOW-UP SURVEY OF FORMER STUDENTS

We are writing you, as a former high school student, to ask your help in improving some of the courses you took in school. By answering a few questions about what you are doing now and giving us your opinions, you can help us plan to make the courses better for students in the future.

Please take a few minutes to answer the questions and mail back your answers and opinions. We're counting on your help.

Thank you very much.

Please answer the questions by putting an "x" in the box next to the answer of YOUR CHOICE or by filling in the blank.

1. Are you now attending a school or college, or *enrolled in a training program, or working as an* apprentice?
(Check ONLY ONE.)

Yes is [1] No is [2]

If you answered "no", please turn the page and go to Question 4.

If you answered "yes", please go on to Question 2 below.

2. In your major area of study (or training), how much do you use the vocational training you received in your high school or area vocational *education center?*
(Check ONLY ONE.)

16 [1] A lot
[2] Some
[3] Hardly any
[4] None

3. Check the type of school or program you are now attending.
(Check ONLY ONE.)

17 [1] High school
[2] 1-year college vocational-technical program
[3] 2-year college vocational-technical program
[4] 2-year college liberal arts program
[5] 4-year college or university
[6] Business or trade school
[7] Apprentice Program
[8] Other _____

Please go to Question 4 on the next page.

4. If you are working for pay, about how many HOURS PER WEEK do you work? Write the number of hours per week in the box.

18 ☐

If you are not working for pay, please go to Question 10 on the next page.

If you are working for pay, please go to Question 5 below.

5. On your present job, how much do you use the vocational training you received in your high school or area vocational education center? (Check ONLY ONE.)

20 ☐ 1 A lot
☐ 2 Some
☐ 3 Hardly any
☐ 4 None

6. Overall, how satisfied are you with your present job? (Check ONLY ONE.)

21 ☐ 1 Very satisfied
☐ 2 Somewhat satisfied
☐ 3 Not very satisfied
☐ 4 Not at all satisfied

7. On my present job I am paid about

22 $ _____ per hour.

8.

Please fill in the name of the company where you work			
Company's Street Address			
City	State	Zip Code	
Please fill in the name of your job			
Please list the three most important things you do on your job 1.	26	LEAVE BLANK	
2.	31		
3.			
Please fill in the name of your job supervisor			

9. The high school job training that you and other former students received usually gets good ratings when we ask supervisors. We may need to ask your supervisor about the training you received in high school. Is that OK with you?

Yes 36 ☐ 1 Please fill in your supervisor's work phone number ( ) _____
Area Code

No ☐ 2

Please go on to Question 10.

10. Are you looking for a job?
(Check ONLY ONE.)

Yes [1] No [2]

11. Are you in the military service?
(Check ONLY ONE.)

Yes [1] No [2]

12. Are you a homemaker?
(Check ONLY ONE.)

Yes [1] No [2]

13. What is your sex?

[1] Male
[2] Female

14. Please identify yourself as a member of one of the groups of people listed below.
(Check ONLY ONE.)

[1] American Indian or Alaskan Native
[2] Asian or Pacific Islander
[3] Black, not of Hispanic Origin
[4] Hispanic
[5] White, not of Hispanic Origin

Please go to Question 15.

15. COMMENTS

Please make any comments and/or suggestions you believe are needed to improve some of the courses you took or services you received while in high school. Also, add any general comments or suggestions you have about your school experience.

(SCHOOL USE ONLY)

1. Yes [1] C [1] or L [2]

No [2]

2. Yes [1] No [2] 3. Co-op Yes [1] No [2]

4. Yes [1] H [1] or LEP [1] or D [1]
No [2]

5. Yes [1] H [1] or LEP [2] or D [3]
No [2]

6. OE [ ][ ] . [ ][ ][ ][ ] 7. PSN [ ][ ][ ][ ][ ][ ]

Name of Program _____

8. If an AREA CENTER or SHARED TIME program, report respondent's home district identification. CIPD [ ][ ] CODI [ ][ ][ ][ ]

9. Telephone [1] Mail [2]

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7/82

Michigan Department of Education

SCHOOL DISTRICT LABEL

1982 FOLLOW-UP SURVEY OF 1981 STUDENTS

We are writing you, as a former high school student, to ask your help in improving some of the courses you took in school. By answering a few questions about what you are doing now and giving us your opinions, you can help us plan to make the courses better for students in the future.

The courses we are writing you about are those that you took in "vocational education" in order to get ready for a job after high school. The courses you took might have been in auto mechanics, office work, marketing and selling, agricultural production, welding and cutting, data processing, child care, small engine repair, electronics, food management, cosmotology, or one of many others possible.

Please take a few minutes to answer the questions and mail back your answers and opinions. We're counting on your help.

Thank you very much.

Please answer the questions by putting an "x" in the box next to the answer of YOUR CHOICE or by filling in the blank.

1. Are you now attending a school or college, or enrolled in a training program, or working as an apprentice?
(Check ONLY ONE.)

Yes 15 ☐1 No 15 ☐2

If you answered "no", please turn the page and go to Question 4.

If you answered "yes", please go on to Question 2 below.

2. In your major area of study (or training), how much do you use the vocational training you received in your high school or area vocational education center?
(Check ONLY ONE.)

16 ☐1 A lot
☐2 Some
☐3 Hardly any
☐4 None

3. Check the type of school or program you are now attending.
(Check ONLY ONE.)

17
☐2 1-year college vocational-technical program
☐3 2-year college vocational-technical program
☐4 2-year college liberal arts program
☐5 4-year college or university
☐6 Business or trade school
☐7 Apprentice Program
☐8 Other _____

Please go to Question 4 on the next page.

4. Are you working for pay?

Yes 18 [1] No 18 [2]

If you are not working for pay, please go to Question 9.

If you are working for pay, please answer questions 5, 6, 7, 8.

5. About how many HOURS PER WEEK do you work? Write the number of hours per week in the box.

19 [ ]

6. On your present job, how much do you use the vocational training you received in your high school or area vocational education center? (Check ONLY ONE.)

21 [1] A lot
[2] Some
[3] Hardly any
[4] None

7. Overall, how satisfied are you with your present job? (Check ONLY ONE.)

22 [1] Very satisfied
[2] Somewhat satisfied
[3] Not very satisfied
[4] Not at all satisfied

8. On my present job I am paid about

23 $ _____ per hour.

Please go on to Question 9.

9. Are you looking for a job? (Check ONLY ONE.)

Yes 27 [1] No 27 [2]

10. Are you in the military service? (Check ONLY ONE.)

Yes 28 [1] No 28 [2]

11. Are you a full-time homemaker? (Check ONLY ONE.)

Yes 29 [1] No 29 [2]

12. What is your sex?

30 [1] Male
[2] Female

13. Please identify yourself as a member of one of the groups of people listed below. (Check ONLY ONE.)

31 [1] American Indian or Alaskan Native
[2] Asian or Pacific Islander
[3] Black, not of Hispanic Origin
[4] Hispanic
[5] White, not of Hispanic Origin

Please go to Question 14.

(SCHOOL USE ONLY)

1. C 32 [1] or L [2] STATUS?
2. Yes 33 [1] No [2] GRADUATE?
3. Yes 34 [1] No [2] CO-OP?
4. Yes 35 [1] No [2] S. N.?
   H 36 [1] and/or LEP 37 [1] and/or D 38 [1]
5. Yes 39 [1] No [2] PROJECT?
   H 40 [1] or LEP [2] or D [3]
6. OE 41 [ ][ ].[ ][ ][ ]
7. PSN 42 [ ][ ][ ][ ][ ]
8. If an AREA CENTER or SHARED TIME program, report respondent's home district identification. CEPD CODE 43 [ ][ ][ ][ ][ ][ ]
9. Telephone 59 [1] Proxy 60 [1]
   Mail [2]

BIBLIOGRAPHY

BIBLIOGRAPHY

Anderson, Barbara Swanson. "A Comparison of Two Methods of Instruction in Office Skills: Classroom-Laboratory and Classroom-Laboratory With Cooperative Work Experience." 1973. (ERIC Document No. ED 082 049)

Belmont, Mitchel Robert. "Investigation of Job Satisfaction Among Correspondence Secretaries." D.B.A. dissertation, Louisiana State University, 1978. (Microfilm AC 801, M6826)

Brailsford, Amelia T. "The Effectiveness of Cooperative Education." 1982. (ERIC Document No. ED 215 139)

Bratner, S. T. "Follow-Up Studies: Who Benefits." American Vocational Journal 50(3) (1975): 26-27.

Breen, E. F., and Freeman, N. "An Appraisal of the Industrial Cooperative Education Program Based on Responses From Students and Employers." Warren, Mich.: Macomb County Community College, 1978.

Breglio, Vincent J., and others. "An Assessment of School Supervised Work Education Programs. Part II: Urban Cooperative Work Education Programs and Follow-Up Study. Final Report Volume 2: Work Education Program Outcomes--A Twenty-Four Month Follow-Up Study." 1976. (ERIC Document No. ED 133 430)

Brockmann, L. O. "Cooperative Work Experience Education--A Study in Success Twenty-Six to Forty Years Later." 1972. (ERIC Document No. ED 079 555)

Brown, Sylvia J. "Cooperative Education and Career Development: A Comparative Study of Alumni." 1976. (ERIC Document No. ED 141 503)

Bryant, Raymond Earl. "Job Satisfaction: A Study of Educational and Demographic Variables Among High School Graduates in 1972." University of Connecticut, 1981. Dissertation Abstracts International 43 (November 1982).

Chiti, Robert Ativo. "Perspectives and Practices of Cooperative Vocational Education Teacher/Coordinators Relating to the Teaching of Occupational Survival Skills to Cooperative Vocational Education Students." Ed.D. dissertation, University of Illinois at Urbana Champaign, 1980.

Congressional Quarterly Almanac 40 (1984): 457.

Cross, Patricia. "The Integration of Learning and Earning: Cooperative Education and Nontraditional Study." ERIC/Higher Education Research Report No. 4. 1973.

Dawson, J. Dudley. "The Breadth of Learning in Cooperative Work Experience." (Adapted from a paper presented at the 16th International Conference for Cooperative Education, Louisville, Kentucky, April 23, 1980.) Journal of Cooperative Education 17(1) (1980-81): 72-73.

Dewar, Thadys. "Choosing Various Instructional Methods to Teach Skills, Knowledges and Attitudes." NBEA Yearbook #9. Reston, Va.: 1981.

Eggleston, John. Work Experience in Secondary Schools. London: Routledge & Kegan Paul, 1982.

Epting, Luther Brooks. "A Comparative Analysis of the Job Satisfaction of 1973-78 Mississippi State University Engineering Graduates From Cooperative and Non-Cooperative Programs." Ed.D. dissertation, Mississippi State University, 1980.

Evans, Rupert N., and Herr, Edwin L. Foundations of Vocational Education. 2nd ed. Columbus, Ohio: Charles E. Merrill Publishing Co., 1978.

Frankel, S. M. "An Assessment of School Supervised Work Education Programs." Executive Summary. Santa Monica, Calif.: Systems Development Corp., 1973. (ERIC Document No. ED 081 998)

Frazier, William D., and Harris, James L. "A Comparison of Two Follow-Up Methods to Survey Occupational Training Graduates." Stillwater, Oklahoma: Research Coordinating Unit, State Department of Vocational Education, 1970.

Freeman, Nancy S. "An Appraisal of the Industrial Cooperative Education Program Based on Selected Characteristics of the Students and Their Academic Performance." 1978. (ERIC Document No. ED 161 497)

_____. "An Appraisal of the Industrial Cooperative Education Program Based on Responses From Students and Employers. Supplemental Report No. 3: The Women Students." 1978. (ERIC Document No. ED 161 498)

Fry, Betty C. "Promoting Business Education Through Use of Follow-Up Information." In Business Education Forum Yearbook, (April-May 1983): Chapter 22.

Gess, Larry R. "A National Policy for Job Creation and Youth Development." VocEd (Journal of the American Vocational Association) 53(6) (1978): 43-47.

Haines, Peter G., and Ozello, Lawrence. "How High School Cooperative Trainees Fare in the Labor Market. Phase C, A Follow-Up Study of 1964 Graduates Ten Months After Graduation." East Lansing: Michigan State University, July 1967.

Hamlin, Michael A. "A Graduate Evaluation of the Cooperative Education Program, Annandale Campus, and a Comparative Assessment of Two-Year Cooperative Education and Non-Cooperative Education Graduates' Career Development for the Years 1974, 1975, and 1976." Annandale: Northern Virginia Community College, 1978.

Helliwell, Michael George. "The Meaning and Value of Work of Senior Cooperative Vocational and Senior Noncooperative Academic Students at Bayonne High School." Ed.D. dissertation, Rutgers University, 1981. Dissertation Abstracts International 42 (October 1981).

Herrnstadt, Erwin; Horowitz, Morris A.; and Sum, Andrew. "Transition From School to Work: The Contribution of Cooperative Education Programs at the Secondary Level." Final Report. Boston, Mass.: Department of Economics, Northeastern University, August 1979. (ERIC Document No. ED 183 721)

Hopkins, Anne H. Work and Job Satisfaction in the Public Sector. New Jersey: Rowman and Allanheld, 1983.

Hoppock, Robert. Job Satisfaction. New York: Harper and Row, 1935. Cited in Hopkins, Anne H. Work and Job Satisfaction in the Public Sector. New Jersey: Rowman and Allanheld, 1983.

Humbert, Jack T., and Woloszyk, Carl A. "Cooperative Education." Columbus: The National Center for Research in Vocational Education, Ohio State University, 1983. (ERIC Document No. ED 212 910)

Kingston, Carmela C. "A Study of the Status and Effectiveness of Cooperative Office Education in New Jersey, 1968-69." 1970. (ERIC Document No. ED 060 182)

Knowles, A. S., ed. Handbook of Cooperative Education. San Francisco: Jossey-Bass, 1971.

Laney, Anna Harris. "A Study of Key Factors of Cooperative Education and Their Relationship to Academic-Major Related Employment of Graduates." Ed.D. dissertation, The Catholic University of America, 1981.

Lewis, Morgan V.; Clyde, Gerald P.; McKee, Duane E.; and Kozak, Lee Ann. Jacob J. Kaufman, Project Director. "Cost-Effectiveness Study of Work Experience Programs." A Research Project in Vocational Education Conducted Under Part C of Public Law 90-576. University Park: Institute for Research on Human Resources, Pennsylvania State University, November 1976.

Lendo, Arthur J. "Reviews of the Literature." The Journal of Cooperative Education 20 (Spring 1984): 99.

Lupton, D. Keith, ed. The Student in Society. Totowa, New Jersey: Littlefield, Adams, & Co., 1969.

Lloyd, Gary M. "An Assessment of Cooperative Vocational Education Programs Since the Educational Amendments of 1976." A National Study Conducted at the National Center for Research in Vocational Education, The Ohio State University. Utah State Office of Education, August 1981.

Mason, Ralph E.; Haines, Peter G.; and Furtado, Lorraine T. Cooperative Occupational Education and Work Experience in the Curriculum. 3rd ed. Danville, Ill.: The Interstate Printers & Publishers, 1981.

Matos-Betancourt, Minerva. "An Assessment of the Cooperative Office Education Program in Public High Schools of Puerto Rico." Ed.D. dissertation, University of Kentucky, 1980.

Meyer, Warren G.; Crawford, Lucy; and Klaurens, Mary K. Coordination in Cooperative Vocational Education. Springfield, Ill.: Charles C. Thomas Publisher, 1975.

Middleton, M. A. "An Evaluation of the Work Experience Education Program in Five Vancouver Secondary Schools." Research Report 75-19, Vancouver (British Columbia) Board of Trustees Education Services Group, October 1975. (ERIC Document No. ED 128 424)

Molnar, D. E. "Cost Effectiveness of Selected Cooperative Vocational Education Programs as Compared With Vocational Programs Without a Cooperative Component, Final Report." Columbus, Ohio: Battelle Memorial Institute, 1973.

Mulcahy, Kevin Francis. "Cooperative Education in the Community College: The Gap Between Theory and Practice." Ed.D. dissertation, University of California, Los Angeles, 1982.

Murphy, Herb. "Enrollment and Follow-Up Trends of Students of Full-Time Day Programs of Minnesota Area Vocational-Technical Institutes from 1970-1979." Vocational Follow-Up System, Vocational-Technical Division, Minnesota Department of Education, 1980.

Oregon. 1976 High School Follow-Up System. "Summary of Findings of a Follow-Up Study of Oregon's High School Class of 1976." 1976. (ERIC Document No. ED 150 400)

Osun, Samuel OluFemi. "A Study of the Cooperative Work Experience Education in Selected High Schools in Southern Illinois With Implications for Developing Cooperative Education in Nigerian Secondary Schools." Ph.D. dissertation, Southern Illinois University at Carbondale, 1980.

Poole, Vicki A. "Work Experience Programs Can Help Develop Human Relations Skills." Business Education Forum 39(4), pp. 9-10.

Richardson, William B., and McFadden, Joan R. "Employment Patterns and Earnings of Secondary School Vocational Education Graduates." Department of Education, Indiana State Board of Education, Purdue University, March 1977. (ERIC Document No. ED 146 348)

Rowe, Patricia M. "Cooperative Programs: Especially Beneficial for Women." Journal of Cooperative Education 16 (Spring 1980). (ERIC Document No. ED 239 844)

Sanders, Lester. A Comparison of Two Methods of Preparing Youth for Employment: Cooperative Occupational Education Versus the Preparatory Vocational-Technical School." 1967. (ERIC Document No. ED 050 226)

Scott, Gary D., and Chapman, Alberta. "Follow-Up of Students, Improvement of Programs in Business and Office and Marketing and Distributive Education." Final Report of Bureau of Vocational Education. Project No. A1880053 F. Murray: Kentucky Department of Education, 1981.

Silberman, H. F., and Ginsburg, M. B., eds. Easing the Transition From Schooling to Work. San Francisco: Jossey-Bass, 1976.

Slick, James M., and Welch, Frederick G. An Evaluation of Cooperative Vocational Education Programs in Pennsylvania. CVE Monograph No. 3, 1974. (ERIC Document No. ED 113 452)

Smith, H. Stuart, Jr. "The Influence of Participation in the Cooperative Program on Academic Performance." Journal of Cooperative Education 8 (November 1971): 7-20.

Smith, Patricia Cain; Kendall, Lorne M.; and Hulin, Charles L. The Measurement of Satisfaction in Work and Retirement. Chicago: Rand McNally & Co., 1969. In Belmont, Mitchell Robert. "Investigation of Job Satisfaction Among Correspondence Secretaries." 1978.

Stoddard, Lucile. "Employer Accountability." In National Business Education Yearbook 1978, p. 63.

Stormsdorfer, E., and Fackler, J. An Economic and Institutional Analysis of the Cooperative Education Programs. Dayton, Ohio: 1973. (ERIC Document No. ED 083 563)

Tuttle, David Chester. "A Follow-Up Study of Graduates' and Employers' Opinions of a Cooperative Training Program." Ed.D. dissertation, University of Northern Colorado, 1965. (ERIC Document No. ED 024 012)

Tyler, Henry T. "Report of the Study of Work Experience Programs in California High Schools and Junior Colleges." Bulletin of the California State Department of Education 25(3) (1956).

Tyler, R. W., and Mills, A. L. Report on Cooperative Education: Summary of the National Study. Detroit: Thomas Alva Edison Foundation, 1961. In Lupton, D. Keith, ed. The Student in Society. Totowa, N.J.: Littlefield, Adams, & Co., 1969.

United States Department of Health, Education and Welfare, Office of Education, Bureau of Occupational and Adult Education. The Handbook: A Vocational Education Legislative Reference. Washington, D.C.: Government Printing Office, 1978.

Van Sickle, H. P. "Professional Development of Women." In Handbook of Cooperative Education. Edited by A. S. Knowles and Associates. San Francisco: Jossey-Bass, 1971.

Vocational-Technical Education Service. Follow-Up Surveys of 1977, 1978, 1979, and 1980 Completers. Lansing: Vocational-Technical Education Service, Michigan Department of Education, 1981.

Walsh, John, and Breglio, Vincent J. "An Assessment of School Supervised Work Education Programs. Part II: Urban Cooperative Education Programs and Follow-Up Study. Executive Summary." 1976. (ERIC Document No. ED 133 423)

Wanat, John A., and Snell, Margaret A. Cooperative Vocational Education. Springfield, Ill.: Charles C. Thomas, Publisher, 1980.

Webber, Kenneth Gething. "Relationship Between Locus of Control and Career Maturity of High School Vocational Cooperative Education Students and Job Satisfaction, Job Performance, and Employer Satisfactoriness." Ph.D. dissertation, Boston University School of Education, 1981.

Weinberg, Ronald William. "The Effects of Cooperative Education on Self-Esteem and Career Maturity in Community College Students." Ed.D. dissertation, Rutgers University, 1983. Dissertation Abstracts International 44 (September 1983).

Willett, George Guy. "The Effect of Experience-Based Education on the Vocational Maturity of Secondary Career and Vocational Education Students." Ph.D. dissertation, Washington State University, 1981.

Willis, Constance A. "Cooperative Education: Some Pluses and Minuses." Journal of Cooperative Education 17 (Winter 1980-81): 39-45. (ERIC Document No. EJ 239 895)

Wilms, W. W. "Vocational Education and Job Success: The Employer's View." Phi Delta Kappan 65 (January 1984): 347-50.

Wilson, James W. Historical Development, Handbook of Cooperative Education. Joseph Axelrod and Mervin B. Freedman, consulting editors. Jossey-Bass Series in Higher Education. San Francisco: Jossey-Bass, 1971.

Wilson, James W., and Lyons, Edward H. Work Study College Programs. New York: Harper and Brothers, 1961. Cited in Lupton, D. Keith, ed. The Student in Society. Totowa, N.J.: Littlefield, Adams, & Co., 1969.

Wolfsberger, James Davis. "A Study to Determine the Effectiveness of the Cooperative Work Experience Program at Gavilan College in Achieving Its Stated Goals and Objectives, as Perceived by Students." Ed.D. dissertation, University of Southern California, 1983. Dissertation Abstracts International 44 (November 1983).

Wentling, T. L., and Lawson, T. E. Evaluating Occupational Education and Training Programs. Boston: Allyn and Bacon, 1975.

Workman, Glenn O. "A Follow-Up Study of the 1962-1966 James Wood High School Industrial Cooperative Training Program." 1969. (ERIC Document No. ED 072 247)

Webster's Third International Unabridged Dictionary. 1971.

World Book Dictionary. Field Enterprises Educational Corporation, 1976.