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MICHIGAN VOCATIONAL BUSINESS EDUCATION CO-OP PROGRAM
COMPLETERS COMPARED TO NON-CO-OP STUDENT COMPLETERS
REGARDING WAGES, JOB SATISFACTION, CONTINUING EDUCATION, AND
JOB-SEEKING FACTORS

Michigan State University

Ph.D. 1985

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COMPLETERS COMPARED TO NON-CO-OP STUDENT COMPLETERS
REGARDING WAGES, JOB SATISFACTION, CONTINUING
EDUCATION, AND JOB-SEEKING FACTORS

By

Nathan Thomas Avani

A DISSERTATION

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and Special Education

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ABSTRACT

MICHIGAN VOCATIONAL BUSINESS EDUCATION CO-OP PROGRAM
COMPLETERS COMPARED TO NON-CO-OP STUDENT COMPLETERS
REGARDING WAGES, JOB SATISFACTION, CONTINUING
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This study attempted to identify if any significant differences existed among vocational accounting and computing, business data processing, and secretarial program completers in regard to wages, job satisfaction, continuing education, and job seeking, in relation to their participation in cooperative education programs or lack of participation in such programs. A statement of the problem and the need for the study are found in Chapter I.

Through a review of the literature in Chapter II, the researcher provides a perspective on cooperative education. Instructional development is also addressed, including discussion of program development, instructional sequencing, and instructional strategies. The relationship between cooperative education program design and instructional systems development is stressed.

The third chapter presents the four questions addressed in the study, along with a discussion of the research population, research design and methodology, procedures, and survey instruments.

Nathan Thomas Avani

Chapter IV contains an analysis of the data for each of the four survey questions regarding accounting and computing, business data processing, and secretarial program completers. Supporting tables are provided.

A summary of the findings and conclusions drawn from the findings concerning cooperative education and vocational business and office education is found in Chapter V. Recommendations are offered for further research in the area of cooperative education, with emphasis on instructional systems development techniques and procedures. Implications for the future of vocational business and office education and instructional development personnel are also discussed.

This dissertation is dedicated to my parents,
Louis and Rosalie Avani.

I am deeply indebted to my father, a man who has
given me so much, especially his strong faith in
God. Without his example of love, patience, and
understanding I would never have set nor achieved
the goals I have accomplished. He is loved and
remembered with that love.

To my mother, for she has given me
Strength to know myself,
Hope that my life could be better,
Kindness when I was hurting,
Solace for my grief,
Faith when I despaired,
Understanding when I was confused,
Acceptance when I failed,
Warmth to sustain me,
Challenge for me to change,
Encouragement to go on,
and through all of these, an example that will
nurture the person I am becoming. She is loved
and always will be loved.

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CHAPTER I

THE PROBLEM

Introduction

Cooperative education is a technique of vocational education in a wage-earning program. It is for persons who, by written cooperative arrangements between school and employers, are employed, receive compensation, and receive instruction, including required courses in school and concurrent or sequential related vocational instruction on a job. The cooperative education program is provided by both secondary and postsecondary institutions. The program is planned and supervised so as to contribute to the student's employability.

According to the National Center for Educational Statistics, over 595,000 secondary and postsecondary vocational-technical education students were enrolled in cooperative education programs during the 1979-1980 school year. It is estimated that about 200,000 of these students are enrolled in 1,000 postsecondary institutions. Thousands of employers in business, industry, and government participate in the cooperative education program annually.

The importance of practical on-the-job training has long been recognized in America. The apprenticeship system provided training for individuals so that they might become master craft workers. With the industrial revolution, the formal apprenticeship system gradually

disappeared. Apprenticeship arrangements became more formalized, wages were paid, and the modern work week was established (Humbert & Woloszyk, 1983). The apprenticeship program was structured around supervised training, tasks that were organized from the simple to the complex, a written training agreement form, and related formal instruction. This established the framework for the cooperative education programs of today.

The first formal cooperative education program in the United States was organized at the University of Cincinnati in 1906. In this program, all engineering students were required to complete professional work experience before they were awarded a degree. The first secondary cooperative education program was established in 1909 at Fitchburg, Massachusetts, in cooperation with the General Electric Company.

From the beginning of federally aided vocational education in 1917, the Federal Board of Vocational Education, and particularly its Commercial Education Service, worked closely with national trade associations in the development of educational programs. The importance of work experience, as a part of the cooperative education program, was stressed by the Federal Board of Vocational Education from 1917 to 1933, and it has been emphasized through federal legislation since then.

From 1939 to the present, cooperation of distributive education personnel with trade associations set the framework for the working relationship that now exists with business and industry through the

cooperative education programs. Some of the trade associations involved in this effort were the National Association of Retail Grocers, the National Dry Goods Association, the National Retail Furniture Association, and many others.

In 1942 a conference was called in Washington, D.C., to consider ways in which cooperative education, at that time primarily linked to distributive education, could help civilians aid the war effort. During this time cooperative education was used in three occupational areas: distributive education, home economics, and trade and industrial education.

The George-Barden Act of 1946 provided continued federal funding of vocational education, including cooperative education, throughout the late 1940s, 1950s, and 1960s, a period of 17 years. In 1961, President John F. Kennedy appointed a panel of consultants to review and evaluate federal vocational legislation. Their recommendations were subsequently incorporated in the Federal Vocational Education Acts of 1963. This legislation for the first time authorized business and office education as a training area in vocational education.

With the passage of the Vocational Education Act of 1963 and the Higher Education Act of 1965, cooperative education programs increased. Both the Commission on Non-traditional Study (1973) and the National Commission on the Reform of Secondary Education (1973) asserted that an important aspect of the educational process had been ignored through failure to promote programs offering occupational

experience to secondary school students. Examination of a survey of attitudes toward public schools reveals that 64% of the American public is in favor of schools hiring additional personnel to help students and graduates obtain employment ("12th Annual Gallup Survey," 1980). According to the poll, every group surveyed favored stronger school-to-work linkages.

With the passage of the Carl Perkins Vocational Education Act of 1984, business and office education continues to be recognized as a viable vocational training program (Schrumpf, 1972). Cooperative education as an effective instructional delivery system has rarely been questioned by the Vocational-Technical Education Service of the Michigan Department of Education. It has been assumed that students who have participated in cooperative education benefit more than students who have not had cooperative education experience.

During the 1980-1981 school year, the State of Michigan, Department of Education, Vocational-Technical Education Service, approved and funded 320 cooperative education programs in vocational business and office education throughout the state. A total of 6,136 students participated in these programs. The state supported these programs in the form of funding that totaled \$310,001. During the 1981-1982 school year, 229 programs were approved; 4,445 students participated, and schools received \$361,864 in state funding. In the 1982-1983 school year, 293 programs were approved; 4,834 students participated, and schools received \$351,082 in state funding. It is estimated that over \$350,000 was used in state funding of cooperative

education programs during the 1983-1984 school year. Table 1 shows the number of programs, student enrollment, and funding of cooperative education in vocational business education in Michigan from 1976 through 1983.

Table 1.--Number of programs, student enrollment, and funding of cooperative education in vocational business education in Michigan, 1976 through 1983.

Year	Number of Programs	Student Enrollment	Reimbursement
1976-77	315	7,566.0	\$317,776.39
1977-78	329	8,319.0	303,437.23
1978-79	330	8,354.0	380,596.41
1979-80	326	6,975.5	286,493.34
1980-81	320	6,136.0	310,001.42
1981-82	299	5,556.5	361,864.47
1982-83	293	4,835.0	351,082.55

Source: Michigan Department of Education, Vocational-Technical Education Service, "X0108 Program Reimbursement Report, 1976-1984" (Lansing: Michigan Department of Education, 1984).

Statement of the Problem

The problem of this study was to determine whether employed vocational business and office program completers who have participated in cooperative education have experienced greater job satisfaction, received higher salaries, pursued more continuing education activities, and been involved in less job seeking than employed vocational business and office program completers who have not participated in cooperative education. The surveys obtained information from former high school students who had completed a vocational business and office education

program in Michigan. These students identified whether they had or had not participated in cooperative education. The Vocational-Technical Education Service of the Michigan Department of Education continues to fund cooperative education programs in vocational business and office education without knowing if participants benefit in the areas mentioned above.

Purpose of the Study and Research Questions

The purpose of this study was to provide information that could lead to more efficient and effective programs in vocational business and office education and in their use of the cooperative education component. The information provided by the program completers of vocational business and office education programs was used to answer the following research questions regarding cooperative education:

1. Do students who have enrolled in vocational business and office education programs, i.e., business data processing, accounting and computing, and secretarial, and have participated in cooperative education, have higher salaries than students in these programs who did not participate in cooperative education?
2. Are vocational business and office education students who have participated in cooperative education more satisfied with their current employment than vocational business and office education students who have not participated in cooperative education?

3. What percentage of vocational business and office education program completers who have participated in cooperative education are looking for a job?

4. What percentage of vocational business and office education program completers who have not participated in cooperative education are looking for a job?

5. How many completers of vocational business and office education programs who have participated in cooperative education are continuing their education?

6. How many completers of vocational business and office education programs who have not participated in cooperative education are continuing their education?

Need for the Study

Since it is a policy of the Michigan Department of Education, Vocational-Technical Education Service, to fund cooperative education programs in vocational business and office education, it is important to know how effective these programs are for students enrolled in them. The state's funding of cooperative education programs for business and office education should be based on facts about such programs in relation to the specific occupational area, i.e., business data processing, accounting and computing, and secretarial.

Limitations of the Study

1. The study covered two different years of data: 1981-1982 and 1982-1983. Additional years were not considered due to inconsis-

tent data items and implementation procedures, i.e., definitional changes, changes in methodology used in obtaining students' responses to surveys, and changes in survey questions.

2. The study is largely descriptive in nature. All independent variables reflect objective measures rather than subjective judgments as to the strengths and/or weaknesses of individual programs.

Assumptions

1. Not all cooperative education experiences for vocational business and office education participants are similar enough in program design and content to assume that the cooperative education program is the same for all students.

2. Not all vocational cooperative education programs for vocational business and office education are the same in student/employer monitoring procedures.

3. Cooperative education for vocational business and office education students makes a difference in their employability.

Instructional Systems Development

This study addressed cooperative education as a methodology in the delivery of instruction relating to vocational training. The Carl Perkins Vocational Education Act of 1984 defines the term "cooperative education" as

a method of instruction of vocational education for individuals who, through written cooperative arrangements between the school and employers, receive instruction, including required academic courses and related vocational instruction by alternation of study in school with a job in any occupational field. . . . The two experiences must be planned and supervised by the school and

employers so that each contributes to the student's education and to his or her employability. Work periods and school attendance may be on alternate half days, full days, weeks, or other periods of time in fulfilling the cooperative program. (Congressional Record--House, October 2, 1984, p. H10771)

The cooperative education program provides an opportunity for the student to perform the skills he/she has learned in the vocational program.

For some students the classroom activities and environment are not effective in providing what it would be like on the job. The cooperative education program furnishes this experience for the student.

Information that can be obtained about the effectiveness of the cooperative education program can aid instructional developers in the development and implementation of other educational programs. It is in this context that the present research study is related to the field of instructional systems development. This study is only the first step in taking a systematic approach to a review of the cooperative education program. The application of instructional systems models, such as the Blondin Model (Appendix L), can serve as a useful evaluative tool and needs-assessment device for making improvements in the program for the future.

The state's follow-up surveys, used as a source for the gathering of data relative to the cooperative education program, can serve as a needs assessment of the program. An analysis of this information can help identify whether the objectives of the program are being met.

Although this study is not addressing the cooperative education program in terms of its instructional content and delivery, it is a starting place for further investigation into and application of instructional systems development technology. Because of the relationship between the cooperative education program and instructional systems, Chapter II, the Review of Literature, includes a section on the development of instruction.

Definition of Terms

The following terms are defined in the context in which they are used in this dissertation.

Added costs: The added costs of a vocational program are measured by calculating the difference between the average cost of a given or a specific vocational program and the average cost of the alternative secondary academic or "general" education program. The added-cost factor is the differential.

Vocational business and office education: Vocational business and office education consists of courses and practical experiences organized into programs of instruction to provide opportunities for students to prepare for, or advance in, selected business and office occupations.

Cooperative education: Cooperative education is a technique of vocational education in a wage-earning program for persons who, by written (and on file) cooperative arrangements between school and employers are employed; receive compensation; and receive instruction,

including required courses in school and concurrent or sequential related vocational instruction on a job.

Program: In this study, the term "program" refers to a secondary, postsecondary, or adult program of studies designed primarily to prepare pupils for entrance into a specific occupation or cluster of occupations.

Program leaver: A program leaver is any eleventh- or twelfth-grade student who was enrolled in a program, did not complete the program, and was not known to be still in school at the time of the study.

Program completer. A program completer is any eleventh- or twelfth-grade student who completed all of the institutional requirements for the vocational program.

Overview

Chapter I contained an introduction to the study, a statement of the problem and purpose of the research, the research questions, the need for the study, assumptions and limitations, and definitions of key terms. In Chapter II, related literature on vocational cooperative education and the development of instruction is reviewed. Chapter III contains a discussion of the design and methodology of the study. Results of the statistical analysis of data collected in the study are contained in Chapter IV. Included in Chapter V are a summary of the study, conclusions, recommendations, and implications.

CHAPTER II

REVIEW OF THE LITERATURE

Vocational Cooperative Education

Public Support

Several recent studies provide evidence of the acceptance of cooperative education programs by employers, educational agencies, parents, and students. For example, a feasibility study by Stauber (1976) revealed that the majority of business and industry representatives, faculty, and students favored the implementation of a cooperative education program in a particular location. In that survey, which obtained results much like those of similar efforts, 96% of the employers, 97% of the educators, and 95% of the students surveyed favored the implementation of a cooperative education program.

A survey of attitudes toward public schools revealed that 64% of the American public was in favor of schools hiring additional personnel to help students and graduates obtain employment ("12th Annual Gallup Survey," 1980). According to the survey results, every group favored stronger school-to-work linkages.

School officials expressed their satisfaction with both the instructional and job-placement aspects of cooperative education programs. Frankel (1973) found that cooperative education programs are

more likely than any other type of program to include the following characteristics:

1. an advisory committee
2. a follow-up program for graduates
3. job-related instruction
4. jobs that offer formal on-the-job training
5. a high rate of job-related placement
6. a job placement service
7. assistance for students in making occupational decisions
8. career-related job placement
9. placement in jobs with a high degree of responsibility
10. placement in highly satisfying jobs

Employer Benefits

Frankel (1973) showed that occupational programs (especially cooperative vocational education programs) generate great enthusiasm among students, employers, and school officials. Students in this study indicated that they believed cooperative education provided them with valuable skills. Employers believed that they benefited from the program and that it contributed to the education and employability of students.

Employers are supportive of the cooperative education program. Eaddy (1975) found employers to be enthusiastic supporters of cooperative education internships as a means of developing professional and technical proficiency. Winer and Snell (1979) noted that employers of secondary cooperative education students gain from the program.

Endicott (1978) found that the employer's most frequently suggested improvements for postsecondary programs were related to an increase in practical and work-related courses and a better understanding of the job market by students.

Cooperative education students are also more satisfactory employees because not as much training is required for them to be "job ready" as is required for other newly hired employees (Welch, 1980). Breen and Freeman (1978) reported that employers believe cooperative education students learn more quickly than do other newly hired employees.

Employers benefit from the ability of cooperative education programs to adapt to labor market and employer needs (Little, 1974). Evans (1971) pointed to the adaptability of cooperative education programs as one of the outstanding advantages of the concept, noting that because employment is available only in occupations in which a continuing need for workers exists, cooperative education programs are kept current.

Winer and Snell (1979) found that employers regard cooperative education programs as an excellent way to recruit employees. Snell (1981) noted that cooperative education assists employers in recruitment because employers realize a higher acceptance rate than through other recruiting programs. In addition, middle managers are more frequently involved in rating cooperative education students than in rating other candidates for employment. Therefore, they tend to be more satisfied with cooperative education students as employees.

Hutt (1975) found that in addition to cooperative education programs' tangible benefits, employers reported that they derived an intangible benefit from participating in cooperative education programs--that is, the self-satisfaction of helping youths. Frankel (1973) agreed that employers believed they were contributing to young people's education by participating in the program.

Student Benefits

Cooperative education programs are designed to contribute to students' career goals by providing career-preparation activities. These programs can also contribute to the broader area of career concerns--individual career development. Career development involves planning, exploring, and establishing life roles. Cooperative education programs are increasingly recommended as a career-development intervention that eases the transition from school to work and promotes career exploration (Silberman & Ginsburg, 1976; Super & Hall, 1978; Wirtz, 1975).

Research has revealed that cooperative education on-the-job experience provides a superior vehicle for vocational exploration (Ducat, 1980). This finding was supported by Klubnik (1977), who asserted that the quality of on-the-job experience in cooperative education is an excellent predictor of the quality of the individual's survival skills. It may be inferred that the possession of superior survival skills is an indication that the individual is effectively managing the transition from school to work.

Lamb and McKay (1979) suggested a plan for effectively assisting students in their efforts to reach career goals. This career-development strategy is the consolidation of placement and cooperative education programs. Lamb (1981) noted that students often come to the placement office to inquire about part-time work and may not be aware of the benefits of cooperative education.

Further, the use of cooperative education concepts and those of placement services as elements of a career-development plan was suggested by Lamb and McKay (1979). Herschelman (1976) suggested that because students seek occupational roles on the basis of skills acquired through career development, cooperative education coordinators must provide the means to integrate cooperative education and career-development activities. The implication of these notions is that cooperative education coordinators must function effectively in a guidance role.

A report by the National Association of Secondary School Principals (1973) mentioned that cooperative education programs offer benefits for students, such as enhanced self-concepts, job satisfaction, and immediate reinforcement for productivity. "Cooperative Vocational Education" (1982), a report developed by the state of Florida, indicated that cooperative education programs do the following things for students:

1. Assist students through counseling during the transition from school to work.
2. Provide training in a chosen occupation.
3. Provide financial rewards along with employment skills.
4. Give meaning and purpose to theoretical knowledge gained in school.

5. Stimulate interest in school by making students aware of the relationship between classroom and job-related learning and success on the job.
6. Help students to develop the work-related habits and attitudes necessary for maturity and confidence.
7. Provide a realistic learning experience in which students may discover their interests and abilities.

These ideas about the benefits of cooperative education have been supported by research. Lewis and associates (1976) noted that school-supervised employment (especially cooperative education) results in increased satisfaction with school and reduced dropout rates. Helliwell (1981) indicated that secondary cooperative education students value work more intensely and have more positive attitudes toward work than do students enrolled in other programs. Welch (1980) reported that cooperative education students express more positive attitudes toward school than do other students. These students also express more positive attitudes toward employment.

Cooperative education programs have also been reported to contribute to students' personal development. Wilson (1974) reported the following positive effects of cooperative education programs on personal growth:

1. Cooperative education students believe that greater personal career development has resulted from their educational program than do other students.
2. Cooperative education students place a higher value on the achievement of career goals, whereas other students value personal well-being more.
3. Cooperative education students display more prudence and conservatism in making judgments than do other students.

Middleton (1975) reported that work experience programs result in students acquiring job skills that help them become self-directed, confident, and mature adults. Cooperative education programs also

promote an understanding of the human-relations aspects of employment. Welch (1980) reported that secondary cooperative education graduates believed that the program helped them adjust to co-workers, customers, and others.

The provision of supervised experiences that smooth the transition from school to work probably is responsible for this increase in interpersonal skills. Osum (1980) noted that cooperative education programs help to orient students to the world of work because they link employment skills and classroom instruction and provide an opportunity for vocational exploration. Agrawal (1978) noted that students most frequently list "opportunities to explore work experiences related to their course of study" as the greatest strength of cooperative education programs.

Welch (1980) reported that secondary cooperative education students earn an average of \$.30 an hour more than students enrolled in other vocational education programs and \$.65 an hour more than those enrolled in general education programs. Herrnstadt (1979) noted that work experience during the high school years is an important factor in the successful transition from school to the labor market.

Improved employability as a result of cooperative education has been documented in several studies. Some of the findings of these studies were as follows:

1. Cooperative education students obtain employment more quickly after high school graduation than do other students (Lewis, 1976).

2. In one study, over 63% of postsecondary cooperative education graduates obtained employment in less than one month after graduation. Only 37% of other students obtained jobs in that time period (Hamlin, 1978).

3. Cooperative education enrollment is an effective predictor of student employability (Little, 1974).

4. Entry-level employees have a better chance of obtaining a job if they have been enrolled in a cooperative vocational education program in high school (Larson, 1981).

Development of Instruction

Technologies of Instruction

Instructional theory and learning methods can be traced to the time when tribal priests systematized bodies of knowledge and early cultures invented pictographs or sign writing to record, preserve, transmit, and reproduce information. In his work The West African Bush School, Watkins (1943) pointed out that "the more advanced the culture, the more complex becomes the devising of a method or methods of instruction for the purpose of incorporating the results of learning into ways of thinking, acting, speaking, and feeling." Watkins further stated, "The aim of each age or society is to find the basic skills or subject matter which offers promise of transfer to learner behavior."

Havelock (1957) described three early methods of instruction: (1) a carefully prepared lecture, (2) the delivery of an extemporized lecture on some subject suggested by a member of the audience, and (3) a free debate chosen by the teacher or by a member of the audience.

Thus began the public lecture. Havelock described the Sophists, early teachers in Athens during the last half of the fifth century B.C. The Sophists never formed a school in the institutional sense, but operated as free-lance teachers in competition with each other, for fees. The Sophists undertook to teach the art of politics and to develop political arete--the excellence of the individual human being in relation to an ideal that could be realized in a political, democratic community.

Jaeger (1939) expressed the philosophy of the Sophists as

clearly the systematic expression of the principle of shaping the intellect, because it begins by instruction in the form of language, the form of oratory, and the form of thought. This educational technique is one of the greatest discoveries which the mind of man has ever made: it was not until it explored these three of its activities that the mind apprehended the hidden law of its own structure.

The influence of the Sophists on subsequent instruction and courses of study has been enormous. Their use of rhetoric, dialectic, and grammar dominated the design of the quadrivium and the trivium (the seven liberal arts, as they came to be called), which made up the curriculum of European education for a thousand years to come.

Snow (1959) discussed scholasticism, an intellectual movement that flourished in Europe during the twelfth century. During the medieval period, this method of instruction applied to authorized teachers in monastic or cathedral schools. The basic characteristics of the scholastic method of instruction were established by Pierre Abelard at various periods between 1108 and 1139. His method can best be described as presenting the pros and cons of certain theological

or philosophical propositions, furnishing no final answers, but leaving the formulation of conclusions up to the student.

The scholastic method laid the groundwork for scientific inquiry and experimentation. Confronted with a mass of traditional and irrational doctrines, the medieval teacher used the scholastic method as his only means of considering them in a systematic, rational manner.

Johann Amos Comenius (1592-1670) was the first real forerunner of modern instructional technology. He laid the foundation of a systematic understanding of the teaching-learning process and anticipated the modern concept of instructional technology as applied science in support of the practical arts. Comenius proposed a system of education open to all, one that led from kindergarten through the university. He advocated many instructional principles, some of which were as follows:

1. Instructional method should follow the order of nature. Content should be studied according to the developmental stage of the learner.
2. Instruction should begin at infancy and should be designed for the age, interest, and capacity of each learner.
3. Whatever is to be taught should be taught as being of practical application to life and should possess some value to the learner.
4. Subject matter should be organized according to its difficulty. Instruction should proceed by the inductive process from the simple to the complex.
5. A graduated series of textbooks and illustrative materials should be correlated with instruction.
6. Sequence is important. For example, it is irrational to teach a foreign language before the mother language has been learned.
7. General principles should be explained and examples given before rules are learned; nothing should be memorized until it is understood.
8. Reading and writing should be taught together; subjects should be correlated wherever possible.
9. Learning is to be approached through the senses; actual objects and things should be studied and associated with words.

10. Content should first be orally presented by the teacher and pictorially illustrated wherever possible.
11. Corporal punishment should not be used for failure in learning. (Saettler, 1968, pp. 22-23)

The monitorial system of instruction was widespread during the first half of the nineteenth century. This instructional system provided a detailed, systematic method in the following six areas: instruction (memory and drill) and a body of content, monitor training, control, grouping, testing, and administration. Under an efficient scheme of classroom management, one teacher taught a group of 50 head pupils, or monitors, who in turn each drilled ten pupils. Thus, one teacher was able to take charge of hundreds of students at one time (Gill, 1887). Bourne (1870) had the following to say about the monitorial system of instruction: "I consider this system as creating a new era in education, as a blessing sent down from heaven to redeem the poor and distressed of this world from the power and dominion of ignorance."

From the studies conducted by Thorndike (1913), with animals, came the first scientific theory of learning: his theory of connectionism. Whereas previous theories had emphasized practice or repetition, Thorndike gave equal consideration to reward or punishment, success or failure, and satisfaction or annoyance to the learner. He formulated laws of learning that provided basic principles leading to a technology of instruction.

According to the connectionist conception, the instructional task of the teacher would be guided by two broad rules: (1) to put together what should go together and (2) to reward desirable

connections and make undesirable connections produce discomfort (Thorndike, 1913). Thorndike formulated the basic principles underlying his technology of instruction as (1) self-activity, (2) interest (motivation), (3) preparation and mental set, (4) individualization, and (5) socialization. To implement these principles, the teacher would have to control the activity of the learners in the desired direction, without ignoring the learner's own interest and individual responses to stimulation.

In contrast to Thorndike, Thomas Dewey believed that stimulus and response were not to be sharply distinguished but were to be seen always as organically related (Edwards, 1936). He contended that learning involved interaction or two-way action between the learner and his environment. Dewey believed the primary goal of instruction to be the improvement of intelligence, and he attacked much of the formalism inherent in both the mental-discipline theory and in the connectionism of Thorndike. Dewey gave teachers a philosophical, theoretical-deductive psychology of learning that made empirical inquiry unnecessary for most educators who accepted his ideas.

In his book Foundations of Method, Kilpatrick (1926) introduced the project method of instruction. His purpose was to reconcile Thorndike's connectionism with Dewey's theory of instruction. Kilpatrick reorganized the curriculum as a succession of projects suitable to the interest of learners. He summarized the role of the teacher as follows. The teacher helps

1. initiate the activity
2. plan how to carry the activity forward
3. execute the plan
4. evaluate progress
5. think up and note new leads
6. formulate the new leads by writing them down for later recall
7. keep the pupils critical of their thinking en route to the solution
8. look back over the whole process to pick up and fix important kinds of learning, as well as to draw lessons for the future

Within this technology of instruction, Dewey's problem-solving method became only one special type of project. The other steps of conventional instructional method--presentation, eliciting the trial response, correcting the trial response, and eliciting the test response--were also part of the Kilpatrick instructional approach, in which they assumed a distinctive form. Rather than presenting an instructional task, the teacher assisted the learner in defining it. The object was not to learn something from a book but to meet a need to resolve a difficulty or problem.

In her book The Montessori Method, Montessori (1964) introduced the concept of "sensory learning." She emphasized the senses, individually and in association with one another. The Montessori technology of instruction was a blend of three somewhat divergent elements: the two fundamental tenets of learner individuality and freedom, and the specific technique of sensory training. Montessori believed that children have a spontaneous interest in learning and that motivation is inherent within the organism's interaction with the environment. In accordance with this idea, Montessori attempted to grade didactic materials and match them to those standards the learner had already developed in the course of his past experiences. By having children

from three to seven years old together, she provided the younger children with a graded series of models for imitation and the older ones with an opportunity to learn by teaching. Thus Montessori succeeded in breaking the lockstep and provided an opportunity for the learner to make his own selection of materials and models.

Morrison (1931) introduced the concept of individualized instruction. His system provided for sequential units and guide sheets for lesson assignments. The classroom was viewed as a laboratory in which units and assignments were differentiated for learners of varying abilities. Morrison's formula for mastery was as follows: pretest, teach, test the results, adapt procedure, teach, and test again to the point of actual learning. The importance of the individualized instructional plans lay in their attempt to provide for individual differences in learning and, at the same time, to teach for specific objectives.

Lewin (1951) added to the technology of instruction with what he termed the "cognitive-field theory of learning." "Cognitive field" describes how a learner comes to know or gains insights into himself and his environment and how, using his insights or cognitions, he acts in relation to his environment. Lewin perceived learning as problem solving--seeking perceptions to restructure the cognitive field, acting in ways to overcome barriers, and incorporating these understandings into a newly organized life space. Within this process he distinguished four kinds of change: change in cognitive structure (knowledge), change in motivation (learning to like or dislike), changing

into group belongingness or ideology, and gain in voluntary control and dexterity of musculature. According to Lewin,

A teacher will never succeed in giving proper guidance to a child if he does not learn to understand the psychological world in which the individual child lives. To describe a situation "objectively" in psychology actually means to describe the situation as a totality of those facts, and of only those facts, which make up the field of the individual. To substitute for that world of the individual the world of the teacher, of the physicist, or of anybody else is to be, not objective, but wrong.

Skinner (1953) advanced the notion of operant conditioning or behaviorism. Skinner's basic thesis was that, since an organism tends in the future to do what it was doing at the time of reinforcement, one can lead it to do much what the experimenter or the teacher wishes it to do. Skinner felt that the most efficient control of human learning requires instrumental aid and that steps should be taken to rectify the shortcomings of traditional instructional practices by developing a scientific technology of instruction. He criticized conventional instructional procedures as being dominated by aversion stimulation and lacking a planned program of serial reinforcement. According to Skinner, to develop a technology of instruction based on operant conditioning, certain specific questions need to be answered: (1) What behavior is to be established? (2) What reinforcers are available? (3) What responses are available? and (4) How can reinforcements be most efficiently scheduled? Skinner wrote:

The whole process of becoming competent in any field must be divided into a very large number of very small steps, and reinforcement must be contingent upon the accomplishment of each step. . . . By making each successive step as small as possible,

the frequency of reinforcement can be raised to a maximum, while the possibly aversive consequences of being wrong are reduced to a minimum.

Instructional Development

Instructional development has different meanings for different individuals. Gustafson's (1971) definition identified instructional development as a process for improving the quality of instruction. Low (1981) stated that its purpose is the synthesis of useful educational products. Faris (1968) suggested that instructional development seeks to "design" instruction, rather than to supplement it. Buhl (1975) defined instructional development as activities aimed at improving the conditions of learning for students.

Abedor and Sachs (1978) defined instructional development as the design, development, implementation, and evaluation of instructional materials, lessons, courses, or curriculum while attempting to improve teaching and learning. According to Schauer (1971), instructional development is "common-sense planning of cooperation to identify and define learning problems and to attempt resolutions of those problems with a plan for action, evaluation, tryout, feedback and results."

The Association for Educational Communications and Technology (AECT, 1977) pointed out that "instructional development is larger than instructional product development, which is concerned with only isolated products, and is larger than instructional design, which is only one phase of instructional development." Finally, Erickson and Curl (1972) defined instructional development in the contexts of

systems and systems approaches. A systems approach is a systematic attempt to achieve specific objectives or to accomplish particular goals through the identification, development, and evaluation of a set of materials and strategies.

In an era in which education is faced with so many problems and the need to change is so rapid, a systematic approach to instructional development may be of great interest and value to educators. This systematic approach to instructional development has gained significant support in North America (Bass & Hand, 1978). Heinich (1970) pointed out that this concept has been referenced many times in prestigious magazines.

A model is a common method for illustrating the process of instructional development. A number of such models exist, which illustrate the relationship between and among the various components of the instructional development process. Examples are found within the works of DeCecco (1968), Hamreus (1970), the Instructional Development Institute (1971), Gerlach and Ely (1971), Gustafson (1971), Gentry (1980-81), Stamas (1972), and Gentry and Trimby (1983), to name a few. In A Comparative Analysis of Models of Instructional Design, Andrews and Goodson (1980) provided the results of an investigation of instructional development models. Instructional developers can work more effectively and efficiently in bringing about instructional change by following the processes outlined in these models.

Generally, the literature presented instructional development as a powerful tool for the execution of educational change. With

appropriate resources, instructional developers can meet the challenges of the 1980s and beyond.

Instructional-Design Process

Briggs (1968) reviewed the topic of sequencing instruction from the perspective of several educational leaders. Alternate ways of conceptualizing the role of sequencing, as viewed by these leaders, are as follows:

1. Gagne: If faced with the task of improving training, he would not look for much help from learning principles (reinforcement, distribution of practice, etc.), but rather to techniques of task analysis and sequencing of learning. Gagne defines curriculum as a sequence of units arranged in such a way that learning each unit may be accomplished as a single act, providing that capabilities described by specific prior units have been developed.
2. Bruner: Provisions for designing sequences of instruction:
 - (a) Arrange it so students grasp the structure by induction from practical instances.
 - (b) Give practice in transfer--why transfer is expected as a result of learning.
 - (c) Use contrast in the sequence.
 - (d) Avoid premature symbolication; provide for images first.
 - (e) Give practice in both leaping and plodding (small steps sometimes necessary but great leaps involving guessing important).
 - (f) Provide for revisiting through use of spiral programs.
3. Scandura: Suggest that the needed theory of instruction would involve the assumption that task analyses, assessments of knowledge, and sequencing matters are more like the variables in a theory of instruction.
4. Pressey: Places considerable responsibility upon the learner in reviewing materials to create cognitive structures of his own. He believes that students can find their own way, sequentially speaking, among the materials in a text book.
5. Skinner: Emphasizes sequencing more heavily than do others because it becomes a matter for attention at the "frame" level of the program as well as in the overall behavioral analysis which sets the strategy for sequencing of the frames in the program. Does not rely heavily upon the concept of transfer. Relies upon the reinforcement of sequences of responses to certain sequences of defined stimuli.

6. Ausubel: Speaks of achieving stable cognitive organization of ideas by use of advanced organizers (general statements in the most abstract form of important ideas).
7. Campbell: Favors learner-controlled sequences as learners select from available materials.

Markle (1969) discussed the concept of linear and intrinsic programming. In linear programming, each student goes in a straight line through a program. "Programmers" determine what responses are relevant and arrange appropriate learning activities for students. To guarantee acquisition of some facts by all students, the amount of practice required by the student who needs the most is how much practice the programmers need to put into the program. Errors by students will tell the programmers when too little practice has been incorporated into the program. In intrinsic programming, materials are presented to students and followed by multiple-choice questions. Each answer leads the student to materials that have been prepared specifically for students who made that particular selection. Practice is related to students' performance in answering questions. Branching provides sidesteps for some students and additional practice opportunities.

Snelbecker (1974) showed how information affects learning theories. He also discussed the relationship between information processing by computers and how human subjects organize and process information "stimuli" presented to them. Snelbecker formed a set of measures and a general experimental design for measuring information under various conditions. He characterized communication as an exchange of messages between two or more selection processes. His

research focused on the similarity between the message as sent and as received, while calculating how much information could have been available both at the sender and at the receiver.

Information theory considers the influence of messages that might have been sent, as well as the signals that were actually transmitted. Snelbecker hoped that informational measures might serve as some kind of universal measure of task difficulty and task performance that could be compared across sensory modalities under various conditions. He contended that there are techniques for organizing data, as well as certain measures of information, that can be useful.

Briggs (1968) suggested that students should be viewed as a "super computer" with an information-processing system of three stages: input, coding (assimilation and storage of input), and output. Briggs felt that the primary aim of modern education should be process learning, i.e., learning "how to know, how to identify crucial parts of the problem, how to solve the problem, and how to acquire specific knowledge needed." Ideally, students should develop a store of broad, general, abstract principles that would allow the greatest transfer of learning. Briggs described the mind (information system) as consisting of two programs:

1. Complexity program: Governs psychological activity level of learner, including level of curiosity, exploration effort, and general state of arousal.
2. Economy program: Covers transformation and reduction of information by a suitable coding process.

Both programs are subject to constraints imposed on the storage of information by immediate memory span.

In Principles of Instructional Design, Gagne and Briggs (1979) described the derivation and application of methods used to design topics, courses, and lessons of instruction. Methods are based on principles of human learning and performance analysis. The authors identified four levels of complexity in intellectual skills: problem solving, rules, concepts, and discrimination. They defined intellectual skill--skill that makes it possible for an individual to respond to his environment--through symbols. Their work emphasized the conditions of learning for acquiring concepts and principles.

Davis (1974) discussed the principles of learning and motivation. He stated that a student is likely to be motivated to learn things that are meaningful to him. Therefore, learning should be related to the student's experiences, interests, values, and future goals.

A student is more likely to acquire new behavior if he is presented with a model performance to watch and imitate. Modeling applies when teaching technical or social skills. The student is more likely to learn if the media used in class are structured so that the instructor's messages are open to students' inspection (open communication). The instructor should:

1. State objectives to the students.
2. Point out relationships, give cues and prompts to students for better understanding.
3. Try to avoid talking about something in its absence.
4. Stimulate all sensory channels by structuring visual and auditory media.
5. Ask students questions to verify communication.

Summary

This chapter contained a review of literature on the subjects of vocational cooperative education and the development of instruction. The first section included a discussion of public support of cooperative education, employer benefits to be gained from cooperative education, and student benefits from such education. The historical development of the technologies of instruction, instructional development, and the instructional design process were discussed in section two.

CHAPTER III

RESEARCH PROCEDURES

Introduction

The 1982 and 1983 follow-up surveys developed by the Michigan Department of Education, Vocational-Technical Education Service, were the primary data sources for the present study. The follow-up studies provided information on individual program completers of vocational business and office education programs approved by the Michigan Department of Education, Vocational-Technical Education Service, for the 1981-1982 and 1982-1983 school years. Only students who were program completers were surveyed.

Background of the study as well as procedures used in conducting the research and hypotheses are provided in this chapter.

Instrument Design

The annual Michigan Department of Education follow-up survey and the survey process itself were established by the Michigan Department of Education, Vocational-Technical Education Service (V-TES), in 1973. The survey was sent to all program completers who had completed more than 50% of a program and had also left high school. Under the federal Vocational Education Data System (VEDS), all program

completers were included in the follow-up surveys for the 1981-1982 and 1982-1983 school years.

Program completers from every vocational education program were identified on V-TES enrollment reports, which were completed by local educational agencies in July 1981 and July 1982. On both surveys, 1981 and 1982, a place was provided for the respondent to identify if he/she had participated in cooperative education as part of his/her vocational training program. General items asked on the 1982 and 1983 follow-up surveys included the following:

General Identification Data

1. Present status (check all that apply)
 - a. Employed--hours per week
 - b. Unemployed
 - c. Looking for a job
 - d. Full-time/part-time student
 - e. Homemaker
 - f. Military service
2. Evaluation of high school (and area vocational education center) courses in terms of preparation for present activity
3. Sex
4. Racial-ethnic group

Employment Data

5. Name of employer and job title
6. Use of school training on present job
7. Degree of job satisfaction
8. Hourly rate of pay
9. Specific employment assistance given to respondent by school
10. All who helped respondent obtain employment

Unemployment Data

11. All who have been asked for assistance in finding employment

Postsecondary-Education Data

Name of school, training, or apprenticeship program
(for local use)

12. Type of school or training program
13. Major area of study or training (for local use)
14. Use of school training in major area of study or training
15. All who helped respondent into present educational program

The follow-up surveys for 1982 and 1983 are found in Appendices A and B.

Survey Procedure

The follow-up surveys conducted in 1982 and 1983 were initiated to gather data about all approved vocational education programs operated by local educational agencies within the state. Local educational agencies were required to report follow-up data on vocational program completers to the Michigan Department of Education, Vocational-Technical Education Service. The Michigan Department of Education was required to transmit and report aggregate statewide data from the surveys to the United States Department of Education.

The 1982 and 1983 follow-up surveys were administered approximately nine months after high school graduation to program completers from all vocational education programs. The Michigan Department of Education, Vocational-Technical Education Service, distributed instructions and survey forms in February 1982 and February 1983. Each survey

form was coded by a six-digit U.S. Department of Education vocational program code and identified by name and a program serial number. Local school districts provided the public relations effort required to achieve a high response rate. A cover letter explained the purposes and uses of the follow-up survey. The cover letter was sent to each program completer. The follow-up surveys were completed during March-April 1982 and 1983 and returned to local educational agencies.

Nonrespondents to the survey were identified through the recording process, and subsequent follow-up letters and additional forms were sent. Local survey results were then prepared by local school district staff. 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 Genesee Intermediate School District for keypunching. After keypunching, the follow-up data were sent to the Michigan Department of Education, Vocational-Technical Education Service. This activity took place in May 1982 and May 1983.

The data from the follow-up surveys are located in the computer center of the Michigan Department of Education and can be accessed by authorized staff. Various computer-generated reports are provided for both the department and local school districts.

Population

The population of this research study comprised 9,189 program completers of vocational business and office education programs for the

1981-1982 school year and 9,586 program completers of vocational business and office education programs for the 1982-1983 school year.

Hypotheses

The vocational program area of business and office education consists of three occupational categories: accounting and computing, business data processing, and secretarial. This researcher tested 12 hypotheses regarding the three occupational categories mentioned.

Those hypotheses are listed on the following pages.

Hypothesis 1: There is no significant difference between the wages of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 2: There is no significant difference between the wages of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 3: There is no significant difference between the wages of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 4: There is no significant difference between the job satisfaction of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 5: There is no significant difference between the job satisfaction of accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 6: There is no significant difference between the job satisfaction of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 7: There is no significant difference between the continuing related education of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 8: There is no significant difference between the continuing related education of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 9: There is no significant difference between the continuing related education of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 10: There is no significant difference between the job seeking of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 11: There is no significant difference between the job seeking of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Hypothesis 12: There is no significant difference between the job seeking of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Background of Study

In 1981 all states were required by the National Center for Educational Statistics to change to the new federal classification system for educational programs. The system was part of an effort to bring about consistency among the states in both their classification of educational programs and in the reporting of data back to the federal government and the National Center. This system is referred to as CIP (Classification of Instructional Programs).

Before the establishment of the CIP code system, states used the U.S. Office of Education (USOE) code structure. Under this code, Michigan had 13 program codes for vocational training programs in business and office education. Given the CIP code system, these 13 codes were consolidated into three vocational training programs for business and office education. The three training programs are accounting and computing, business data processing, and secretarial. The CIP codes and descriptors of these programs are found in Appendix C.

Students who are enrolled in a vocational business and office program can also take part in cooperative education. The Vocational-Technical Education Service of the Michigan Department of Education views the cooperative education program as a viable instructional technique and believes that those students who participate in this program will acquire some benefits over those students who do not participate in cooperative education. Some of these benefits were identified in Chapter II--related literature on cooperative education.

This research study deals with the benefits of cooperative education participation. Four questions from the state's follow-up survey of program completers were analyzed in relation to one's participation or lack of participation in the cooperative education program. These four questions are described in detail in the Research Design section.

When the data from the follow-up surveys are collected and processed through the Genesee Intermediate Office and sent to the

Department of Education, analyses by staff members of the Vocational-Technical Education Service are conducted. When an analysis is conducted on data regarding cooperative education, the data are not examined by each specific occupational area. The data are analyzed by occupational category, i.e., business and office education, health occupations, and trade and industrial occupations. The different occupational programs within the broad occupational areas are combined. As in the case of business and office education, the data are not analyzed by the three occupational program areas of business data processing, accounting and computing, and secretarial, but combined data representing the business and office category. Therefore, information regarding cooperative education by specific occupational program area can only be viewed in a generic sense across all occupations within the business and office area.

If the data can be collected and analyzed by specific occupational program area, i.e., business data processing, accounting and computing, and secretarial, they will provide a more accurate picture of the benefits of cooperative education on specific occupations. This information will be useful and necessary in the design and operation of more effective and efficient programs in business and office education and in the design and operation of the cooperative education program itself. This information will also be useful in a review of the Michigan Department of Education, Vocational-Technical Education Service, policy on the funding and design of cooperative education programs.

Research Design

This research study deals with the following four questions that are listed on the follow-up surveys for both years--1982 and 1983.

Job Satisfaction

The job satisfaction dependent measure was based on responses received for the survey item shown in Figure 1. A POSITIVE job satisfaction rate was computed by adding the sum of the Very Satisfied and Somewhat Satisfied responses. A NEGATIVE job satisfaction rate was computed by adding the sum of the Not Very Satisfied and Not At All Satisfied responses.

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

Figure 1.--1982 and 1983 follow-up survey job satisfaction item.

Wages

The wages dependent measure was based on responses received for the survey item shown in Figure 2. A HIGH wage rate was identified if the respondent was earning a wage equal to or greater than the current minimum wage rate of \$3.35. A LOW wage rate was identified if the respondent was earning a wage less than the minimum wage rate of \$3.35.

Answer ONLY if you are working for pay:

On my present job I am paid about

\$ _____ per hour.

Figure 2.--1982 and 1983 follow-up survey wages item.

Looking for a Job

The job-seeking dependent measure was based on responses received for the survey item shown in Figure 3. A POSITIVE job-seeking rate was determined if the respondent indicated that he/she was not looking for a job. A NEGATIVE job-seeking rate was determined if the respondent indicated that he/she was looking for a job.

Answer ONLY if you are NOT working for pay:

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

Yes _____ No _____

Figure 3.--1982 and 1983 follow-up survey job-seeking item.

Continuing Education

The continuing education dependent measure was based on the responses received for the survey item shown in Figure 4. A POSITIVE continuing education rate was determined if the respondent indicated that he/she was continuing his/her education. A NEGATIVE continuing education rate was determined if the respondent indicated that he/she was not continuing his/her education.

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

Yes _____

No _____

Figure 4.--1982 and 1983 follow-up survey continuing education item.

An illustration containing the dependent and independent variables is shown in Figure 5. This illustration also provides an overview of the general design of this research study.

For the 1983 follow-up survey, 12,761 completers of vocational business and office education programs were surveyed. Of that number, 9,586 surveys were returned for a 78% response rate. For the 1982 follow-up survey, 12,086 program completers of vocational business and office education programs were surveyed, and 9,189 surveys were returned for a response rate of 76%. Detailed information concerning the response results of the 1982 and 1983 follow-up surveys for vocational business and office program completers is shown in Figures 6 and 7. Provided in Figure 6 is information regarding the number of students surveyed, surveys returned, response rate, and occupational program area for the 1983 follow-up survey. Figure 7 provides the same information for the 1982 follow-up survey.

Data-Analysis Procedure

Several data-manipulation processes took place to prepare the data for the chi-square analysis. The data collected from the surveys are contained in the computer center of the Michigan Department of

Selected Questions
From Survey →

1 = WAGES
2 = JOB SATISFACTION
3 = CONTINUING
EDUCATION
4 = JOB SEEKING

1982 FOLLOW-UP SURVEY			1983 FOLLOW-UP SURVEY		
CO-OP PARTICIPATION			NON CO-OP PARTICIPATION		
Occupations*			Occupations		
A/C	DP	S	A/C	DP	S
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4

Dependent Variables

Selected questions from the survey are the dependent variables.

Independent Variables

1. Year (1982 & 1983)
2. Group (Co-Op & Non Co-Op)
*3. Occupational Category (A/C Accounting & Computing, DP Data Processing, S Secretarial)

Figure 5.--Illustration of research study.

Number Surveyed	Number Returned	Response Rate	Occupational Program Area Descriptor	
870	710	81.6%	14.0102 Bookkeepers	Accounting & Computing 07.0101 CIP
32	18	56.3%	14.0104 Machine Operators	
118	87	73.7%	14.0105 Tellers	
649	500	77.0%	14.0200 Business Data Processing	Business Data Processing 07.0301 CIP
682	469	68.8%	14.0201 Computer/ Console Operator	
440	274	62.3%	14.0203 Programmers	
196	126	64.3%	14.0303 General Office Clerks	Secretarial 07.0601 CIP
2,142	1,672	78.1%	14.0703 Steographers	
60	62	103.3%	14.0797 Medical Secretary	
42	42	100.0%	14.0798 Legal Secretary	
1,601	1,068	66.7%	14.0901 Clerk Typist	
805	598	74.3%	14.9700 Clerical Lab	
5,124	3,960	77.3%	14.9800 Steno/ Clerical Lab	
12,761	9,586	78.1%	Totals	

Figure 6.--Response rates for the 1983 State Follow-Up Survey.

Number Surveyed	Number Returned	Response Rate	Occupational Program Area Descriptor	
796	634	79.6%	14.0102 Bookkeepers	Accounting & Computing 07.0101 CIP
25	20	80.0%	14.0104 Machine Operators	
85	77	90.6%	14.0105 Tellers	
282	242	85.8%	14.0200 Business Data Processing	Business Data Processing 07.0301 CIP
864	617	71.4%	14.0201 Computer/ Console Operator	
388	270	69.6%	14.0203 Programmers	
167	121	72.5%	14.0303 General Office Clerks	Secretarial 07.0601 CIP
2,109	1,656	78.5%	14.0703 Stenographers	
60	54	90.0%	14.0797 Medical Secretary	
59	55	93.2%	14.0798 Legal Secretary	
1,394	1,018	73.0%	14.0901 Clerk Typist	
659	515	78.1%	14.9700 Clerical Lab	
5,198	3,910	75.2%	14.9800 Steno/ Clerical Lab	
12,086	9,189	76.0%	Totals	

Figure 7.--Response rates for the 1982 State Follow-Up Survey.

Education. The present investigator was granted authorization from the State Director of Vocational-Technical Education to have access to the data for purposes of this study.

The writer requested from the computer center of the Michigan Department of Education that a computer program be written that would create two computer-output documents. The data from the follow-up surveys of 1981 and 1982 were to serve as the data base for the documents. The first document was to represent those responses from vocational business and office program completers who had participated in cooperative education as part of their vocational training. The second document represented respondents who had not participated in cooperative education as part of their vocational training. These two types of documents were requested for the 1981 and 1982 follow-up surveys. Four computer-generated reports were produced. Appendix E is an example of these documents.

The four computer-generated documents displayed the data by the 13 occupational areas in business and office education that were in effect during the time the surveys were conducted. As mentioned earlier in this chapter, the 13 occupational areas were defined as part of the USOE code system. To prepare the data for this research, it was necessary to convert the data from the 13 occupational areas to the three occupational areas currently representing the vocational business and office area. The 13 occupational areas were consolidated into the following occupational areas under the CIP code system for vocational program classification: accounting and computing, business data

processing, and secretarial. A code conversion chart is located in Appendix D, along with the worksheets for each of the four questions addressed in this study, i.e., wages, job satisfaction, continuing education, and job seeking (Appendices F, G, H, and I). When all the worksheets were completed for each of the three occupational areas, a worksheet was developed to display the numbers needed to conduct the chi-square test of statistical significance (Appendix J). A final worksheet was developed to serve as a source document for entering the test data into the microcomputer (Appendix K).

A Northstar microcomputer was used in conducting the chi-square statistical test. The researcher used a statistical software package called Micro-Stat in performing the statistical test. For each chi-square test, the microcomputer provided in hard-copy form the observed and expected frequencies and the observed and expected percentages.

The chi-square test for statistical significance was an appropriate statistic to be applied in this study. The research design supports this selection, as well as the fact that data were being used without regard to frequency of responses. The responses to the questions being analyzed in this study were one of two conditions--positive or negative. The chi-square test only indicated if a difference existed between the two groups relative to the questions being tested. This is appropriate, considering null hypotheses were being tested. The chi-square test was also appropriate because the data were comprised of unequal groups.

Summary

Chapter III presented the research procedures used in this study. The chapter contained a description of the survey-instrument design, survey procedures, population, hypotheses, research design, background to the study, and the data-analysis procedures. Also presented in this chapter were the response rates from the 1983 and 1982 follow-up surveys of 1982 and 1981 students. An analysis of the data is presented in Chapter IV.

CHAPTER IV

ANALYSIS OF DATA

This chapter presents the results of an analysis of the data collected to determine how students enrolled in vocational business education programs are affected when they also participate in cooperative education. Each hypothesis is treated separately, followed by a summary that treats each of the occupational areas, i.e., accounting and computing, business data processing, and secretarial.

Hypothesis 1

There is no significant difference between the wages of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their respective wages for the years 1981 and 1982 on the follow-up surveys, and these wages were categorized as being either HIGH or LOW. If respondents earned a wage equal to or greater than the minimum wage rate of \$3.35, they were arbitrarily assigned to the HIGH category. Those whose wages fell below the minimum wage were placed in the LOW category. The chi-square statistic was used to determine whether participating in cooperative education affected the wage rate of these respondents. A chi-square

test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 495 respondents, of whom 60 had enrolled in cooperative education programs and 435 who had not (Table 2). The chi-square run on the 1981 data produced a value of only 0.002, which means that the hypothesis was not rejected. That is, there was no apparent relationship demonstrated between completing a cooperative education program and wage rate.

Table 2.--Observed frequencies of business data-processing program completers regarding wages for 1981 and 1982 (N = 1,029).

	Non Co-op Participation	Co-op Participation	Total
1981			
High	183	26	209
Low	252	34	286
Total	435	60	495
Chi-square value = 0.002 df = 1			
1982			
High	204	16	220
Low	292	22	314
Total	496	38	534
Chi-square value = 0.003 df = 1			

Note: HIGH = Survey respondents with < minimum wage of \$3.35.
LOW = Survey respondents with > minimum wage of \$3.35.

There were similar results for the data collected for 1982, also presented in Table 2. Of the 534 respondents, 38 had completed a cooperative education program, whereas 496 had not. The chi-square run on these data resulted in a value of only 0.003, which again indicated no significant difference between those respondents who had completed a cooperative education program and those who had not. Thus the hypothesis was upheld for both sets of data.

Hypothesis 2

There is no significant difference between the wages of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their respective wages for the years 1981 and 1982 on the follow-up surveys, and these wages were categorized as being either HIGH or LOW. If respondents earned a wage rate equal to or greater than the minimum wage rate of \$3.35, they were arbitrarily assigned to the HIGH category. Those whose wages fell below the minimum wage were placed in the LOW category. The chi-square statistic was used to determine whether participating in cooperative education affected the wage rate of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 318 respondents, of whom 79 had enrolled in cooperative education programs and 239 had not (Table 3). The chi-square run on the 1981 data produced a value of 9.029, which means that the hypothesis was rejected. That is, an apparent

relationship was demonstrated between completing a cooperative education program and wage rate.

Table 3.--Observed frequencies of accounting and computing program completers regarding wages for 1981 and 1982 (N = 712).

	Non Co-op Participation	Co-op Participation	Total
1981			
High	91	46	137
Low	148	33	181
Total	239	79	318
Chi-square value = 9.029*			
df = 1			
1982			
High	108	55	163
Low	171	60	231
Total	279	115	394
Chi-square value = 2.427			
df = 1			

*Significant at the alpha = .01 level.

Note: HIGH = survey respondents with < minimum wage of \$3.35.
 LOW = survey respondents with > minimum wage of \$3.35.

There were different results for the data collected for 1982, also presented in Table 3. Of the 318 respondents, 115 had completed a cooperative education program, whereas 279 had not. The chi-square run

on these data resulted in a value of only 2.427, which means that the hypothesis was not rejected. That is, no significant difference existed between respondents who had completed a cooperative education program and those who had not, in terms of wage rate.

Hypothesis 3

There is no significant difference between the wages of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their respective wages for the years 1981 and 1982 on the follow-up surveys, and these wages were categorized as being either HIGH or LOW. If respondents earned a wage equal to or greater than the minimum wage rate of \$3.35, they were arbitrarily assigned to the HIGH category. Those whose wages fell below the minimum wage were placed in the LOW category. The chi-square statistic was used to determine whether participating in cooperative education affected the wage rate of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate significant difference.

The 1981 sample consisted of 3,784 respondents, of whom 1,781 had enrolled in cooperative education programs and 2,003 had not (see Table 4). The chi-square run on the 1981 data produced a value of 143.183, which means that the hypothesis was rejected. An apparent relationship was demonstrated between completing a cooperative education program and wage rate.

Table 4.--Observed frequencies of secretarial program completers regarding wages for 1981 and 1982 (N = 7,581).

	Non Co-op Participation	Co-op Participation	Total
1981			
High	783	1,044	1,827
Low	1,220	737	1,957
Total	2,003	1,781	3,784
Chi-square value = 143.183*			
df = 1			
1982			
High	648	945	1,593
Low	1,351	853	2,204
Total	1,999	1,798	3,797
Chi-square value = 156.873*			
df = 1			

*Significant at the alpha = .01 level.

Note: HIGH = Survey respondents with < minimum wage of \$3.35.
 LOW = Survey respondents with > minimum wage of \$3.35.

There were similar results for the data collected for 1982, also presented in Table 4. Of the 3,797 respondents, 1,798 had completed a cooperative education program, while 1,999 had not. The chi-square run on these data resulted in a value of 156.873, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not

completed such a program. Thus, the hypothesis was rejected for both sets of data.

Hypothesis 4

There is no significant difference between the job satisfaction of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their degree of job satisfaction for the years 1981 and 1982 on the follow-up surveys. Degree of job satisfaction was categorized as being either POSITIVE or NEGATIVE. If respondents indicated they were Very Satisfied or Somewhat Satisfied, they were categorized in the POSITIVE category. If respondents were Not Very Satisfied or Not at All Satisfied, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job satisfaction of these respondents. A chi-square test value of 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 634 respondents, of whom 179 had enrolled in cooperative education programs and 455 had not. The chi-square run on the 1981 data produced a value of only 5.412, which means that the hypothesis was not rejected. That is, there was no apparent relationship demonstrated between completing a cooperative education program and job satisfaction (Table 5).

There were similar results for the data collected for 1982, also presented in Table 5. Of the 647 respondents, 48 had completed a cooperative education program, while 599 had not. The chi-square run

on these data resulted in a value of only 1.285, which indicates no significant difference between respondents who had completed a cooperative education program and those who had not. Thus, the hypothesis was upheld for both sets of data.

Table 5.--Observed frequencies of business data-processing program completers regarding job satisfaction for 1981 and 1982 (N = 1,281).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	396	168	564
Negative	59	11	70
Total	455	179	634
Chi-square value = 5.412 df = 1			
1982			
Positive	439	31	470
Negative	160	17	177
Total	599	48	647
Chi-square value = 1.285 df = 1			

Note: Positive = Survey respondents indicating job satisfaction
Negative = Survey respondents indicating job dissatisfaction

Hypothesis 5

There is no significant difference between the job satisfaction of accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their degree of job satisfaction for the years 1981 and 1982 on the follow-up surveys. Degree of job satisfaction was categorized as being either POSITIVE or NEGATIVE. If respondents indicated they were Very Satisfied or Somewhat Satisfied, they were categorized in the POSITIVE category. If respondents were Not Very Satisfied or Not at All Satisfied, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job satisfaction of these respondents. A chi-square test value of 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 394 respondents, of whom 101 had enrolled in cooperative education programs and 293 had not enrolled in such programs. The chi-square run on the 1981 data produced a value of only 3.653, which means that the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and job satisfaction, as shown in Table 6.

There were different results for the data collected in 1982, also presented in Table 6. Of the 483 respondents, 147 had completed a cooperative education program, while 336 had not. Chi-square analysis resulted in a value of 14.661, which means that the hypothesis was rejected. That is, there was an apparent relationship demonstrated between completing a cooperative education program and job satisfaction.

Table 6.--Observed frequencies of accounting and computing program completers regarding job satisfaction for 1981 and 1982 (N = 877).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	231	89	320
Negative	62	12	74
Total	293	101	394
Chi-square value = 3.653 df = 1			
1982			
Positive	251	133	384
Negative	85	14	99
Total	336	147	483
Chi-square value = 14.661* df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating job satisfaction
Negative = Survey respondents indicating job dissatisfaction

Hypothesis 6

There is no significant difference between the job satisfaction of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated their degree of job satisfaction for the years 1981 and 1982 on the follow-up surveys. Degree of job satisfaction was categorized as being either POSITIVE or NEGATIVE. If

respondents indicated they were Very Satisfied or Somewhat Satisfied, they were categorized in the POSITIVE category. If respondents were Not Very Satisfied or Not at All Satisfied, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job satisfaction of these respondents. A chi-square test value of 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 4,502 respondents, of whom 720 had enrolled in cooperative education programs and 3,782 had not. Chi-square analysis of the 1981 data produced a value of 62.502, which means that the hypothesis was rejected. That is, there was an apparent relationship demonstrated between completing a cooperative education program and job satisfaction, as shown in Table 7.

There were similar results for the data collected for 1982, also presented in Table 7. Of the 4,566 respondents, 2,156 had completed a cooperative education program, while 2,410 had not completed such a program. Chi-square analysis resulted in a value of 41.569, which indicates no significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus the hypothesis was upheld for both sets of data.

Table 7.--Observed frequencies of secretarial program completers regarding job satisfaction for 1981 and 1982 (N = 9,068).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	1,933	484	2,417
Negative	1,849	236	2,085
Total	3,782	720	4,502
Chi-square value = 62.502*			
df = 1			
1982			
Positive	1,904	1,861	3,765
Negative	506	295	801
Total	2,410	2,156	4,566
Chi-square value = 41.569			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating job satisfaction
 Negative = Survey respondents indicating job dissatisfaction

Hypothesis 7

There is no significant difference between the continuing related education of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were continuing their education on the follow-up surveys for 1981 and 1982. Responses were categorized as being either POSITIVE or NEGATIVE. If respondents indicated they

were continuing their education, they were arbitrarily assigned to the POSITIVE category. If respondents indicated they were not continuing their education, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the continuing education activity of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate significant difference.

The 1981 sample consisted of 1,118 respondents, of whom 95 had enrolled in cooperative education programs and 1,023 had not enrolled in such programs (Table 8). Chi-square analysis of the 1981 produced a value of only 2.946, which means that the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and continuing education.

Similar results for the data collected for 1982 are presented in Table 8, as well. Of the 1,237 respondents, 93 had completed a cooperative education program, while 1,144 had not completed such a program. Chi-square analysis resulted in a value of only 0.001, which indicates no significant difference between those respondents who had completed a cooperative education program and those who had not completed such a program, in terms of continuing their education. Thus the hypothesis was upheld for both sets of data.

Table 8.--Observed frequencies of business data-processing program completers regarding continuing their education for 1981 and 1982 (N = 2,355).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	636	50	686
Negative	387	45	432
Total	1,023	95	1,118
Chi-square value = 2.946 df = 1			
1982			
Positive	734	59	793
Negative	410	34	444
Total	1,144	93	1,237
Chi-square value = 0.001 df = 1			

Note: Positive = Survey respondents indicating continuing their education
 Negative = Survey respondents indicating not continuing their education

Hypothesis 8

There is no significant difference between the continuing related education of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were continuing their education on the follow-up surveys for 1981 and 1982. Responses were categorized as being either POSITIVE or NEGATIVE. If respondents indicated they

were continuing their education, they were arbitrarily assigned to the POSITIVE category. If respondents indicated they were not continuing their education, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the continuing education activity of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate significant difference.

The 1981 sample consisted of 725 respondents, of whom 172 had enrolled in cooperative education programs and 553 had not enrolled in such programs, as shown in Table 9. The chi-square run on the 1981 data produced a value of only 0.287, which means that the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and continuing education.

Similar results were demonstrated for the data collected for 1982, also presented in Table 9. Of the 805 respondents, 194 had completed a cooperative education program; 611 had not completed such a program. The chi-square analysis of these data resulted in a value of 0.456, which indicated no significant difference between respondents who had completed a cooperative education program and those had not completed such a program. Thus, the hypothesis was upheld for both sets of data.

Table 9.--Observed frequencies of accounting and computing program completers regarding continuing their education for 1981 and 1982 (N = 1,530).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	326	106	432
Negative	227	66	293
Total	553	172	725
Chi-square value = 0.287 df = 1			
1982			
Positive	356	119	475
Negative	255	75	330
Total	611	194	805
Chi-square value = 0.456 df = 1			

Note: Positive = Survey respondents indicating continuing their education
 Negative = Survey respondents indicating not continuing their education

Hypothesis 9

There is no significant difference between the continuing related education of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were continuing their education on the follow-up surveys for 1981 and 1982. Responses were categorized as being either POSITIVE or NEGATIVE. If respondents indicated they

were continuing their education, they were arbitrarily assigned to the POSITIVE category. If respondents indicated they were not continuing their education, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the continuing education activity of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate significant difference.

The 1981 sample consisted of 7,230 respondents, of whom 3,081 had enrolled in cooperative education programs and 4,149 had not enrolled in such programs (see Table 10). The chi-square analysis of the 1981 data produced a chi-square value of 14.943, which means that the hypothesis was rejected. There was an apparent relationship demonstrated between cooperative and continuing education.

Similar results were found for the data collected for 1982, also presented in Table 10. Of the 7,426 respondents, 3,088 had enrolled in cooperative education programs and 4,338 had not enrolled in such programs. The chi-square run on these data resulted in a value of 13.820, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus the hypothesis for both sets of data was upheld.

Table 10.--Observed frequencies of secretarial program completers regarding continuing their education for 1981 and 1982 (N = 14,656).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	1,905	1,557	3,462
Negative	2,244	1,524	3,768
Total	4,149	3,081	7,230
Chi-square value = 14.943*			
df = 1			
1982			
Positive	2,148	1,665	3,813
Negative	2,190	1,423	3,613
Total	4,338	3,088	7,426
Chi-square value = 13.820*			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating continuing their education

Negative = Survey respondents indicating not continuing their education

Hypothesis 10

There is no significant difference between the job seeking of vocational business data-processing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were looking for a job for the years 1981 and 1982 on the follow-up surveys. Their responses were

categorized as being either POSITIVE or NEGATIVE. If respondents indicated on the survey by checking the "no" box that they were not looking for a job, they were arbitrarily assigned to the POSITIVE category. If they indicated they were looking for a job by checking the "yes" box, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job seeking of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 1,045 respondents; of this number, 85 had enrolled in cooperative education programs and 960 had not enrolled in such programs (see Table 11). The chi-square analysis of the 1981 data produced a value of 3.001, which means that the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and job seeking.

The results were different for the data collected for 1982, also presented in Table 11. Of the 1,294 respondents, 719 had completed a cooperative education program and 575 had not completed such a program. The chi-square run on the data resulted in a value of 955.399, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus Hypothesis 10 was rejected for the 1982 data.

Table 11.--Observed frequencies of business data-processing program completers regarding job seeking for 1981 and 1982 (N = 2,339).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	392	26	418
Negative	568	59	627
Total	960	85	1,045
Chi-square value = 3.001 df = 1			
1982			
Positive	517	31	548
Negative	58	688	746
Total	575	719	1,294
Chi-square value = 955.399* df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating not looking for a job
Negative = Survey respondents indicating looking for a job

Hypothesis 11

There is no significant difference between the job seeking of vocational accounting and computing program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were looking for a job for the years 1981 and 1982 on the follow-up surveys. Their responses were categorized as being either POSITIVE or NEGATIVE. If respondents

indicated on the survey by checking the "no" box that they were not looking for a job, they were arbitrarily assigned to the POSITIVE category. If they indicated they were looking for a job by checking the "yes" box, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job seeking of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 699 respondents, of whom 167 had enrolled in cooperative education programs and 532 had not enrolled in such programs (see Table 12). The chi-square run on the 1981 data produced a value of 14.684, which means that the hypothesis was rejected. That is, there was an apparent relationship demonstrated between completing a cooperative education program and job seeking.

There were similar results for the data collected for 1982, also presented in Table 12. Of the 779 respondents, 184 had enrolled in cooperative education programs and 595 had not enrolled in such programs. The chi-square analysis of these data resulted in a value of 11.592, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus, the hypothesis for both sets of data was upheld.

Table 12.--Observed frequencies of accounting and computing program completers regarding job seeking for 1981 and 1982 (N = 1,478).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	234	45	279
Negative	298	122	420
Total	532	167	699
Chi-square value = 14.684*			
df = 1			
1982			
Positive	264	55	319
Negative	331	129	460
Total	595	184	779
Chi-square value = 11.592*			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating not looking for a job
 Negative = Survey respondents indicating looking for a job

Hypothesis 12

There is no significant difference between the job seeking of vocational secretarial program completers who are employed and have participated in a cooperative education component and those who have not participated in such a component.

Respondents indicated if they were looking for a job for the years 1981 and 1982 on the follow-up surveys. Their responses were categorized as being either POSITIVE or NEGATIVE. If respondents

indicated on the survey by checking the "no" box that they were not looking for a job, they were arbitrarily assigned to the POSITIVE category. If they indicated they were looking for a job by checking the "yes" box, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job seeking of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 6,812 respondents, of whom 2,884 had enrolled in cooperative education programs and 3,928 had not enrolled in such programs (see Table 13). The chi-square analysis of the data produced a value of 39.541, which means that the hypothesis was rejected. There was an apparent relationship demonstrated between completing a cooperative education program and job seeking.

Similar results were found for the data collected for 1982, also presented in Table 13. Of the 7,152 respondents, 2,944 had enrolled in cooperative education programs and 4,208 had not enrolled in such programs. The chi-square analysis of these data resulted in a value of 57.892, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus, the hypothesis was upheld for both sets of data.

Table 13.--Observed frequencies of secretarial program completers regarding job seeking for 1981 and 1982 (N = 13,96).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	1,684	1,018	2,702
Negative	2,244	1,866	4,110
Total	3,928	2,884	6,812
Chi-square value = 39.541*			
df = 1			
1982			
Positive	1,966	1,109	3,075
Negative	2,242	1,835	4,077
Total	4,208	2,944	7,152
Chi-square value = 57.892*			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating not looking for a job
 Negative = Survey respondents indicating looking for a job

Results of Supplemental Analyses

Supplemental analyses were conducted to reflect the changes that occurred when the data from the three occupational areas, i.e., accounting and computing, business data processing, and secretarial, were combined to represent the broad area of business and office education. These analyses are described in the following paragraphs.

Respondents indicated their respective wages for the years 1981 and 1982 on the follow-up surveys, and these wages were categorized as being either HIGH or LOW. If respondents earned a wage equal to or greater than the minimum wage rate of \$3.35, they were arbitrarily assigned to the HIGH category. Those whose wages fell below the minimum wage were placed in the LOW category. The chi-square statistic was used to determine whether participating in cooperative education affected the wage rate of the respondents.

The 1981 sample consisted of 4,597 respondents, of whom 1,920 had enrolled in cooperative education programs and 2,677 had not enrolled in such programs (see Table 14). The chi-square analysis of the 1981 data produced a value of 115.117, which means that the hypothesis was rejected. That is, there was an apparent relationship demonstrated between completing a cooperative education program and wage rate.

Similar results were evident for the data collected for 1982, also presented in Table 14. Of the 4,725 respondents, 1,951 had completed a cooperative education program and 2,774 had not completed such a program. The chi-square analysis of the 1982 data resulted in a value of 142.941, which indicates a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus the hypothesis was upheld for both sets of data.

Table 14.--Observed frequencies for all vocational business education program completers regarding wages for 1981 and 1982 (N = 9,322).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	1,057	1,116	2,173
Negative	1,620	804	2,424
Total	2,677	1,920	4,597
Chi-square value = 155.117*			
df = 1			
1982			
Positive	960	1,016	1,976
Negative	1,814	935	2,749
Total	2,774	1,951	4,725
Chi-square value = 142.941*			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents with less than or equal to the minimum wage of \$3.35
 Negative = Survey respondents with more than the minimum wage of \$3.35

The second supplemental analysis was on combined data in the area of job satisfaction. Respondents indicated their degree of job satisfaction for the years 1981 and 1982 on the follow-up surveys. Their degree of job satisfaction was categorized as being either POSITIVE or NEGATIVE. If they indicated they were Very Satisfied or

Somewhat Satisfied, respondents were arbitrarily assigned to the POSITIVE category. If respondents were Not Very Satisfied or Not at All Satisfied, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job satisfaction of these respondents.

The 1981 sample consisted of 3,896 respondents, of whom 1,000 had enrolled in cooperative education programs and 2,896 had not enrolled in such programs. The chi-square analysis of the 1981 data produced a value of 116.331, which means that the hypothesis was rejected. There was an apparent relationship demonstrated between completing a cooperative education program and job satisfaction, as shown in Table 15.

Similar results were shown for the data collected for 1982, also presented in Table 15. Of the 5,696 respondents, 2,351 had completed a cooperative education program and 3,345 had not completed such a program. The chi-square analysis of these data resulted in a value of 65.805, which indicated a significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus, the hypothesis was rejected for both sets of data.

Table 15.--Observed frequencies for all vocational business education program completers regarding job satisfaction for 1981 and 1982 (N = 9,592).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	2,560	741	3,301
Negative	336	259	595
Total	2,896	1,000	3,896
Chi-square value = 116.331*			
df = 1			
1982			
Positive	2,594	2,025	4,619
Negative	751	326	1,077
Total	3,345	2,351	5,696
Chi-square value = 65.805*			
df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating job satisfaction
 Negative = Survey respondents indicating job dissatisfaction

The third supplemental analysis was in the area of continuing education. Respondents indicated if they were continuing their education for the years 1981 and 1982 on the follow-up surveys. Their responses were categorized as being either POSITIVE or NEGATIVE. If respondents indicated they were continuing their education by checking

the "yes" box on the survey, they were arbitrarily assigned to the POSITIVE category. If they checked the "no" box, respondents were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the continuing education activity of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 9,073 respondents, of whom 3,348 had enrolled in cooperative education programs and 5,725 had not enrolled in such programs (see Table 16). The chi-square run on the 1981 data produced a value of 0.954, which means that the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and continuing education.

There were similar results for the data collected for 1982, also presented in Table 16. Of the 9,468 respondents, 3,375 had enrolled in cooperative education programs and 6,093 had not. The chi-square analysis of these data resulted in a value of 1.815, which indicates there was no significant difference between respondents who had completed a cooperative education program and those who had not completed such a program. Thus, the hypothesis for both sets of data was upheld.

Table 16.--Observed frequencies for all vocational business education program completers regarding continuing their education for 1981 and 1982 (N = 18,541).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	2,867	1,713	4,580
Negative	2,858	1,635	4,493
Total	5,725	3,348	9,073
Chi-square value = 0.954 df = 1			
1982			
Positive	3,238	1,843	5,081
Negative	2,855	1,532	4,387
Total	6,093	3,375	9,468
Chi-square value = 1.815 df = 1			

Note: Positive = Survey respondents indicating continuing their education
 Negative = Survey respondents indicating not continuing their education

The fourth supplemental analysis was conducted in the area of job seeking. Respondents indicated if they were looking for a job for the years 1981 and 1982 on the follow-up surveys. Their responses were categorized as being either POSITIVE or NEGATIVE. If respondents indicated on the survey they were seeking a job by checking the "no"

box, they were arbitrarily assigned to the POSITIVE category. If respondents indicated they were looking for a job by checking the "yes" box, they were placed in the NEGATIVE category. The chi-square statistic was used to determine whether participating in cooperative education affected the job seeking of these respondents. A chi-square test value equal to or greater than 6.635 at an alpha of .01 was chosen to indicate a significant difference.

The 1981 sample consisted of 9,156 respondents, of whom 3,736 had enrolled in cooperative education programs and 5,420 had not enrolled in such programs (see Table 17). The chi-square analysis of the 1981 data produced a value of 5.921, which means the hypothesis was not rejected. There was no apparent relationship demonstrated between completing a cooperative education program and job seeking.

The results were different for the data collected for 1982, also presented in Table 17. Of the 9,225 respondents, 3,947 had completed a cooperative education program and 5,378 had not completed such a program. The chi-square analysis of these data resulted in a value of 366.327, which means the hypothesis was rejected. Hence there were significant differences between respondents who had completed a cooperative education program and those who had not completed such a program, in terms of job seeking, for the 1982 data analysis.

Table 17.--Observed frequencies for all vocational business education program completers regarding job seeking for 1981 and 1982 (N = 18,381).

	Non Co-op Participation	Co-op Participation	Total
1981			
Positive	2,310	1,689	3,999
Negative	3,110	2,047	5,157
Total	5,420	3,736	9,156
Chi-square value = 5.921 df = 1			
1982			
Positive	2,747	1,195	3,942
Negative	2,631	2,652	5,283
Total	5,378	3,847	9,225
Chi-square value = 366.327* df = 1			

*Significant at the alpha = .01 level.

Note: Positive = Survey respondents indicating not looking for a job
Negative = Survey respondents indicating looking for a job

Table 18 provides a profile for accounting and computing program completers in regard to the four survey questions. For 1981, two of the four null hypotheses were rejected at the .01 level. The remaining two hypotheses were upheld at the .01 level. For 1982, two hypotheses were rejected and two hypotheses were upheld, as was the

case in 1981. In the areas of continuing education and job seeking, the results were consistent for both years.

Table 18.--Summary table for accounting and computing program completers: all survey questions.

	Wages	Job Satisfaction	Continuing Education	Job Seeking
1981	+	-	-	+
1982	-	+	-	+

+ Null hypothesis rejected at alpha = .01.

- Null hypothesis not rejected at alpha = .01.

Table 19 provides a profile for business data-processing program completers with regard to the four survey questions. For 1981, all four null hypotheses were rejected at the .01 level. For 1982, one null hypothesis was rejected.

Table 19.--Summary table for business data-processing program completers: all survey questions.

	Wages	Job Satisfaction	Continuing Education	Job Seeking
1981	-	-	-	-
1982	-	-	-	+

+ Null hypothesis rejected at alpha = .01.

- Null hypothesis not rejected at alpha = .01.

Table 20 provides a profile for secretarial program completers with regard to the four survey questions. For both 1981 and 1982, the null hypotheses were all rejected at the .01 level.

Table 20.--Summary table for secretarial program completers: all survey questions.

	Wages	Job Satisfaction	Continuing Education	Job Seeking
1981	+	+	+	+
1982	+	+	+	+

+ Null hypothesis rejected at $\alpha = .01$.

- Null hypothesis not rejected at $\alpha = .01$.

Table 21 displays the information from Tables 18, 19, and 20 to reflect the total vocational business and office area. Individual program differences were altered (masked) as a result of combining these tables.

Table 22 is a summary of the chi-square test results for the following occupational areas: 07.0101 accounting and computing, 07.0301 business data processing, and 07.0601 secretarial. A chi-square test result equal to or greater than 6.635 at $\alpha = .01$ is necessary for a significant difference to be stated. An asterisk identifies the hypotheses with a significant chi-square result.

Table 21.--Summary table for all occupational program areas in
business/office education: all survey questions.

		Wages	Job Satisfaction	Continuing Education	Job Seeking
Accounting and Computing	1981	+	-	-	+
	1982	-	+	-	+
Business Data Processing	1981	-	-	-	-
	1982	-	-	-	+
Secretarial	1981	+	+	+	+
	1982	+	+	+	+
All occupa- tional areas combined	1981	+	+	-	-
	1982	+	+	-	+

+ Null hypothesis rejected at alpha = .01.

- Null hypothesis not rejected at alpha = .01.

Table 22.--Summary table of chi-square test results for all occupational areas.

Hypothesis	Question	CIP Code	1981	1982
Ho 1	Wages	07.0101	9.029*	2.427
Ho 2	Wages	07.0301	0.002	0.003
Ho 3	Wages	07.0601	143.183*	156.873*
Ho 4	Job Satisfaction	07.0101	5.412	1.285
Ho 5	Job Satisfaction	07.0301	5.412	1.285
Ho 6	Job Satisfaction	07.0601	62.502*	41.569*
Ho 7	Attending School	07.0101	0.287	0.456
Ho 8	Attending School	07.0301	2.946	0.001
No 9	Attending School	07.0601	14.943*	13.820*
Ho 10	Job Seeking	07.0101	14.684*	11.592*
Ho 11	Job Seeking	07.0301	3.001	955.902*
Ho 12	Job Seeking	07.0601	39.541*	57.523*

*Significant at the alpha = .01 level.

Summary

Chapter IV presented an analysis of the data from this study. Tables were provided for describing the chi-square test values that were calculated regarding the three vocational occupational programs: business data processing, accounting and computing, and secretarial. Data from these three program areas were combined to form the broad occupational area referred to as business and office education.

Additional tables were provided for describing the supplemental analyses that were conducted on the broad area of business and office education. This analysis was conducted to reflect the changes that occurred when the data from the three occupational programs were combined.

A chi-square test was conducted to determine if significant differences existed among the three occupational program areas, and within the broad area of business and office education, with regard to the following survey items: (1) wages, (2) job satisfaction, (3) continuing education, and (4) job seeking.

Chapter V contains a summary of the findings, conclusions, recommendations, and implications based on the findings of this study.

CHAPTER V

SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND IMPLICATIONS

Introduction

The Vocational Education Act of 1963, subsequent amendments to the act, and the Carl Perkins Vocational Education Act of 1984 have attempted to make vocational education programs accountable to students for related job placement and student employment success on the job. The cooperative education program, as a strategy of instruction, is part of the delivery system for providing students with the necessary skills for successful employment.

Several national and state reports on the quality and effectiveness of the public educational system were published in 1984. In light of these reports, the study of the benefits of cooperative education participation is very timely. The purpose of this study was to provide information that could lead to more efficient and effective programs in vocational business and office education and in their use of the cooperative education program. This chapter is a summary of the study, as well as conclusions, recommendations, and implications based on the research findings.

Summary of the Study

The problem of this study was to determine whether employed vocational business and office program completers in the occupational areas of accounting and computing, business data processing, and secretarial, who participated in cooperative education, have received higher salaries, experienced greater job satisfaction, pursued continuing education activities, and been involved in less job seeking than employed vocational business and office program completers who did not participate in cooperative education.

Research Procedure

The population of this study consisted of 18,775 respondents to the Michigan Department of Education's 1981 and 1982 follow-up surveys of completers of vocational business and office education programs throughout Michigan. The chi-square statistic was used to determine whether participating in cooperative education programs affected the wage rate, job satisfaction, continuing education, and job seeking of these respondents. A chi-square test value equal to or greater than 6.635 at the $\alpha = .01$ level was chosen to indicate significant difference. Descriptive analyses of the three occupational programs within the vocational business and office area, i.e., accounting and computing, business data processing, and secretarial, were completed. Supplemental analyses were conducted to reflect the changes that occurred when the data from the three occupational programs were combined to represent the broad area of business and office education.

Findings

The descriptive findings were based on the 1982 and 1983 follow-up survey responses. A summary of the findings related to the specific research questions was derived by using the chi-square statistical test. The findings for each of the specific research questions for completers of vocational programs in accounting and computing, business data processing, and secretarial, and regarding their participation in cooperative education for the years 1981 and 1982, are as follows:

1. Do students who have enrolled in vocational business and office education programs, i.e., business data processing, accounting and computing, and secretarial, and have participated in cooperative education, earn higher salaries than students in these programs who have not participated in cooperative education?
 - a. Students who completed a vocational accounting and computing program, and participated in cooperative education, earned a higher salary in 1981 than did completers of the same program who did not participate in cooperative education.
 - b. Students who completed a vocational accounting and computing program, and participated in cooperative education, did not earn a higher salary in 1982 than did completers of the same program who did not participate in cooperative education.
 - c. Students who completed a vocational business data processing program, and participated in cooperative education, did not earn a higher salary in 1981 than did completers of the same program who did not participate in cooperative education.

- d. Students who completed a vocational business data processing program, and participated in cooperative education, did not earn a higher salary in 1982 than did completers of the same program who did not participate in cooperative education.
- e. Students who completed a vocational secretarial program, and participated in cooperative education, earned a higher salary in 1981 than did students who completed the same program but did not participate in cooperative education.
- f. Students who completed a vocational secretarial program, and participated in cooperative education, earned a higher salary in 1982 than did students who completed the same program but did not participate in cooperative education.
- g. Students who completed a vocational business and office education program, and participated in cooperative education, earned a higher salary in 1981 than did students who completed the same program but did not participate in cooperative education.
- h. Students who completed a vocational business and office education program, and participated in cooperative education, earned a higher salary in 1982 than did students who completed the same program but did not participate in cooperative education.

2. Are vocational business and office education students who have participated in cooperative education more satisfied with their current employment than vocational business and office education students who have not participated in cooperative education?

- a. Students who completed a vocational accounting and computing program, and participated in cooperative education, were no more satisfied with their jobs in 1981 than were students who completed the same program but did not participate in cooperative education.
- b. Students who completed a vocational accounting and computing program, and participated in cooperative education, were more satisfied with their jobs in 1982 than were students who completed the same program but did not participate in cooperative education.

- c. Students who completed a vocational business data processing program, and participated in cooperative education, were no more satisfied with their jobs in 1981 than were students who completed the same program but did not participate in cooperative education.
- d. Students who completed a vocational business data processing program, and participated in cooperative education, were no more satisfied with their jobs in 1982 than were students who completed the same program but did not participate in cooperative education.
- e. Students who completed a vocational secretarial program, and participated in cooperative education, were more satisfied with their jobs in 1981 than were students who completed the same program but did not participate in cooperative education.
- f. Students who completed a vocational secretarial program, and participated in cooperative education, were more satisfied with their jobs in 1982 than were students who completed the same program but did not participate in cooperative education.
- g. Students who completed a vocational business and office education program, and participated in cooperative education, were more satisfied with their jobs in 1981 than were students who completed the same program but did not participate in cooperative education.
- h. Students who completed a vocational business and office education program, and participated in cooperative education, were more satisfied with their jobs in 1982 than were students who completed the same program but did not participate in cooperative education.

3. What percentage of vocational business and office education program completers who have participated in cooperative education are looking for a job?

- a. More student completers of vocational accounting and computing programs who did not participate in cooperative education were looking for a job in 1981 than were student completers of the same programs who did participate in cooperative education.

- b. More student completers of vocational accounting and computing programs who did not participate in cooperative education were looking for a job in 1982 than were student completers of the same programs who did not participate in cooperative education.
- c. No more student completers of vocational business data-processing programs who participated in cooperative education were looking for a job in 1981 than were student completers of the same programs who did not participate in cooperative education.
- d. More student completers of vocational business data-processing programs who did not participate in cooperative education were looking for a job in 1982 than were student completers of the same programs who did participate in cooperative education.
- e. More student completers of vocational secretarial programs who did not participate in cooperative education were looking for a job in 1981 than were student completers of the same programs who did participate in cooperative education.
- f. More student completers of vocational secretarial programs who did not participate in cooperative education were looking for a job in 1982 than were student completers of the same programs who did participate in cooperative education.
- g. No more student completers of vocational business and office education programs who participated in cooperative education were looking for a job in 1981 than were student completers of the same programs who did not participate in cooperative education.
- h. More student completers of vocational business and office education programs who did not participate in cooperative education were looking for a job in 1982 than were student completers of the same programs who did participate in cooperative education.

4. How many completers of vocational business and office education programs who have participated in cooperative education are continuing their education?

- a. Students who completed a vocational accounting and computing program, and participated in cooperative education, were not continuing their education in any greater number in 1981 than were students who completed the same program but did not participate in cooperative education.
- b. Students who completed a vocational accounting and computing program, and participated in cooperative education, were not continuing their education in any greater number in 1982 than were students who completed the same program but did not participate in cooperative education.
- c. Students who completed a vocational business data processing program, and participated in cooperative education, were not continuing their education in any greater number in 1981 than were students who completed the same program but did not participate in cooperative education.
- d. Students who completed a vocational business data processing program, and participated in cooperative education, were not continuing their education in any greater number in 1982 than were students who completed the same program but did not participate in cooperative education.
- e. Students who completed a vocational secretarial program, and participated in cooperative education, were continuing their education in greater numbers in 1981 than were students who completed the same program but did not participate in cooperative education.
- f. Students who completed a vocational secretarial program, and participated in cooperative education, were continuing their education in greater numbers in 1982 than were students who completed the same program but did not participate in cooperative education.
- g. Students who completed a vocational business and office education program, and participated in cooperative education, were not continuing their education in any greater number in 1981 than were students who completed the same program but did not participate in cooperative education.
- h. Students who completed a vocational business and office program, and participated in cooperative education, were not continuing their education in any greater numbers in 1982 than were students who completed the same program but did not participate in cooperative education.

Conclusions

The research findings of this study indicated that differences existed within the three specific occupational areas of accounting and computing, business data processing, and secretarial in regard to students' participation in cooperative education. These differences were in the areas of wages, job satisfaction, job seeking, and continuing education.

The findings of this research were from two separate years of data collection: 1981 and 1982. Based on the findings of this research, the following conclusions were drawn:

1. Accounting and computing occupations
 - a. Whether one participated in cooperative education or did not participate in the cooperative education program did not influence wages earned, job satisfaction, or continuing-education activities.
 - b. Students who participated in a cooperative education program were involved in less job seeking than were their counterparts who did not participate in cooperative education.
2. Business data-processing occupations
 - a. Whether one participated in cooperative education or did not participate in the cooperative education program did not influence wages earned, job satisfaction, or continuing-education activities.

- b. Students who participated in a cooperative education program were involved in less job seeking than were their counterparts who did not participate in cooperative education.

3. Secretarial occupations

- a. Whether or not one participated in cooperative education did influence wages earned, job satisfaction, continuing-education activities, and job seeking.

Recommendations

Based on the findings of this research study, the following recommendations are made:

1. Changes should be made in the federal, state, and local collection and reporting requirements relating to cooperative education in vocational business and office education. These changes would result in the collection and reporting of cooperative education data in vocational business and office education by specific occupational area, i.e., business accounting and computing, data processing, and secretarial.
2. State staff should re-examine the purpose of the state's follow-up survey.
3. Certain items on the state's follow-up survey should be deleted and others added, based on the findings of this study.
4. This study should be replicated and applied to other vocational program areas, i.e., trade and industrial, health, and home economics.

5. Further research should be conducted in cooperative education, specifically in the areas of program content and instructional delivery.

6. Instructional-development models such as the Gerlach and Ely model and the Blondin model, should be used in a review of cooperative education programs.

Implications

Recommendations from this research study have implications for various organizations and personnel. These implications are as follows:

1. Federal, state, and local agencies/personnel responsible for the collection and reporting of data pertaining to vocational education (specifically vocational business and office education) and cooperative education will need to make changes in their procedures to accommodate the reporting at the specific occupational level as opposed to the broad category of classification.

2. The Michigan Department of Education, Vocational-Technical Education Service, has developed task-based curriculum for use in vocational-training programs. (See Appendix N--Accounting and Computing Task List.) The extent to which these tasks are incorporated into the overall training program and extended to the "practical" work experience provided in the cooperative education program will need to be reviewed by both state and local school district staff.

3. Some cooperative education training sites may not be appropriate for providing the student with the kinds of experiences necessary for growth and potential employability in the occupational area. A review by state staff and local school district personnel of the occupational-training-site selection procedures and the occupational training agreement among the school, student, and business should take place. (See Appendix O, Training Station Prospectus, and Appendix P, Cooperative Education Student Training Agreement.)

4. A review of the literature on cooperative education indicated the following student benefits: (1) value work more intensely; (2) positive attitude toward work; (3) positive attitude toward school; (4) contributes to student's personal development; (5) helps students discover their interests and abilities; (6) helps students become more self-directed, confident, and mature adults; and (7) promotes the understanding of the human-relations aspect of employment. The current state follow-up survey does not address any of the above-mentioned benefits. State staff will need to review the purpose of the survey and the questions being asked. Implications for changes in the purpose of the survey and the questions being asked are proposed by the writer.

5. Changes in the content and delivery of the cooperative education program resulting from the use of an organization-development model should be undertaken.

6. The findings of this research should be considered by state staff in reviewing current guidelines for vocational business and office education programs. New guidelines should be developed to reflect the findings of this study.

APPENDICES

APPENDIX A

1983 FOLLOW-UP SURVEY OF 1982 STUDENTS

VT 4045-A
2/83

Michigan Department of Education

SCHOOL DISTRICT LABEL

1983 FOLLOW-UP SURVEY OF 1982 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, cosmetology, 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 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.)

- 1b ☐ 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.)

1c

- ☐ 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.

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 ³² ☐ 2 STATUS?

2. Yes ³³ ☐ 1 No ³³ ☐ 2 GRADUATE?

3. Yes ³⁴ ☐ 1 No ³⁴ ☐ 2 CO-OP?

4. Yes ³⁵ ☐ 1 No ³⁵ ☐ 2 S. N.?

H ³⁶ ☐ 1 and/or LEP ³⁷ ☐ 1 and/or D ³⁸ ☐ 1

5. Yes ³⁹ ☐ 1 No ³⁹ ☐ 2 PROJECT?

H ⁴⁰ ☐ 1 or LEP ⁴¹ ☐ 2 or D ⁴² ☐ 3

6. OF ⁴³

7. PSN ⁴⁴

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

CTPD CODE

9. Telephone ⁵⁰ ☐ 1 Proxy ⁵⁰ ☐ 1
 Mail ⁵¹ ☐ 2

14. 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. (If you are working for pay please provide the helpful information in the box at the bottom of this page.)

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		

APPENDIX B

1982 FOLLOW-UP SURVEY OF 1981 STUDENTS

VI 4041-A
1/82

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, cosmetology, 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 ☐ 1 No ☐ 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.)

- ☐ 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.)

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

CITY COUN
 52

9. Telephone 50 Proxy 51
 Mail

14. 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. (If you are working for pay please provide the helpful information in the box at the bottom of this page.)

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		

APPENDIX C

BUSINESS AND OFFICE OCCUPATIONS

CIP CodeProgram Description

- 07.0101 Accounting and Computing. Approved programs in accounting and computing prepare students for occupations within the accounting field. These programs should include preparation for the following occupations: Inventory Clerk, Payroll Clerk, Cost Clerk, Bookkeeper I, Bookkeeper II, Central Ledger Bookkeeper, Accounting Clerk, Insurance Clerk II, Account Information Clerk, Credit Clerk, Classification Control Clerk, Invoice Clerk, Billing Control Clerk, and Audit Clerk. Teller training should also be available through this program. This program has a strong emphasis on computerized accounting procedures. Computerized procedures are integrated into the program's curriculum and reflect the tasks performed by the different occupations. Accounting and computing activities are conducted through on-line terminals, mini-systems, and/or microcomputers.
- 07.0301 Business Data Processing. Approved programs in business data processing train students for various occupations within the field of data processing. The business data processing program is a comprehensive program. The program's focus is occupational preparation in the areas of data entry, computer operations, and computer programming. Students have access to acquiring an employable skill in one or more of these areas.
- 07.0601 Secretarial and Related Programs. This instructional program prepares individuals to record and transcribe communications, to provide administrative support, and to abstract, classify, and file information. Word-processing skills shall be an integral part of the instructional program for all clerical/secretarial business education students. The program will accommodate students who are interested in pursuing the following occupations: executive secretary (administrative assistant); legal secretary; medical secretary/medical assistant; stenographer (communications specialist); clerk typist, typist, correspondence clerk; file clerk (information specialist); reprographics clerk; general office clerk; mail and order clerk; receptionist and communications system operator; shipping, receiving, and stock clerk; traffic, rate, and transportation clerk; and word-processing specialist.
- Advanced secretarial students, who complete their instructional activities and skills before the instructional year terminates, may filter into other vocational programs to acquire additional skills which enhance their employability. Skills could be acquired, for example, in a Graphic Arts program in such occupations as forms designer, keyboard operator, keyliner, offset press operator, and proofreader.

APPENDIX D

PROGRAM CODES AND DESCRIPTORS

Displayed below are the three occupational program areas that comprise the business and office area, i.e., business data processing, accounting and computing, and secretarial. Also shown are the USOE codes and program titles that were formally used by the United States Department of Education.

PROGRAM CODES AND DESCRIPTORS

PROGRAM DESCRIPTOR	USOE CODE	PROGRAM TITLE
Accounting and Computing CIP Code 07.0101	14.0102	Bookkeepers
	14.0104	Machine Operators
	14.0105	Tellers
Business Data Processing CIP Code 07.0301	14.0200	Business Data Processing
	14.0201	Computer/Console Operators
	14.0203	Programmers
Secretarial CIP Code 07.0601	14.0303	General Office Clerks
	14.0703	Stenographers
	14.0797	Medical Secretary
	14.0798	Legal Secretary
	14.0901	Clerk Typist
	14.9700	Clerical Lab
	14.9800	Steno/Clerical Lab

APPENDIX E

COMPUTER OUTPUT REPORTS

MICHIGAN DEPARTMENT OF EDUCATION
VOCATIONAL-TECHNICAL EDUCATION SERVICES
1983 FOLLOW-UP SURVEY OF 1982 COMPLETERS

12-01-83

Page 1

Steno/Clerical Lab

14.9800

VE Completers Reporting = 2,293
(Follow-Up Student Survey Data)

6,188

38,226

OE Code

Occup. Area

State-VE

Item 1. Attending a school or college, enrolled in a training program,
working as an apprentice:

- Yes	1,105	48.55%	3,251	52.92%	16,320	43.28%
- No	1,171	51.45%	2,892	47.08%	21,390	56.72%
Number responding	2,276	100.00%	6,143	100.00%	37,710	100.00%

Item 2. Degree of use of school training in major area of study:

- A lot	528	48.44%	1,538	47.47%	6,700	41.32%
- Some	341	31.28%	1,032	31.85%	4,939	30.46%
- Hardly any	97	8.90%	289	8.92%	1,771	10.92%
- None	124	11.38%	381	11.76%	2,803	17.29%
Number responding	1,090	100.00%	3,240	100.00%	16,213	100.00%

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Item 3. Type of educational program now attending:

- 1 year college (voc-tech)		%		%		%
- 2 year college (voc-tech)	58	6.07%	149	5.26%	814	5.79%
- 2 year college (liberal arts)	344	36.02%	986	34.80%	4,701	33.46%
- 4 year college or university	129	13.51%	410	14.47%	2,388	17.00%
- Business or trade school	268	28.06%	934	32.97%	4,651	33.11%
- Apprentice program	150	15.71%	340	12.00%	1,205	8.58%
- Other	6	.63%	14	.49%	289	2.06%
Number responding	955	100.00%	2,833	100.00%	14,048	100.00%

Note: This is a typed copy of a computer-generated form.

APPENDIX F

WORKSHEET HOURLY PAY RATE

Hourly Pay Rate: Completers

NON-COOPERATIVE-EDUCATION PARTICIPATION

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour
Number responding

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour
Number responding

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour

COOPERATIVE EDUCATION PARTICIPATION

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour
Number responding

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour
Number responding

\$0.01 - \$3.34 per hour
\$3.35 - \$3.84 per hour
\$3.85 - \$4.34 per hour
\$4.35 - \$4.84 per hour
\$4.85 - \$5.34 per hour
\$5.35 - \$5.84 per hour
\$5.85+ per hour
Number responding

APPENDIX G

WORKSHEET CONTINUING EDUCATION

Attending a School or College, Enrolled in a Training Program, Working as an Apprentice:
Completers

NON-COOPERATIVE-EDUCATION PARTICIPATION

YES
NO
Number responding

YES
NO
Number responding

YES
NO
Number responding

COOPERATIVE EDUCATION PARTICIPATION

YES
NO
Number responding

YES
NO
Number responding

YES
NO
Number responding

APPENDIX H

WORKSHEET LOOKING FOR A JOB

Looking for a Job: Completers

NON-COOPERATIVE-EDUCATION PARTICIPATION

YES
NO
Number responding

YES
NO
Number responding

YES
NO
Number responding

COOPERATIVE EDUCATION PARTICIPATION

YES
NO
Number responding

YES
NO
Number responding

YES
NO
Number responding

APPENDIX I

WORKSHEET JOB SATISFACTION

Job Satisfaction: Completers

NON-COOPERATIVE-EDUCATION PARTICIPATION

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

COOPERATIVE EDUCATION PARTICIPATION

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

Very satisfied
Somewhat satisfied
Not very satisfied
Not at all satisfied
Number responding

APPENDIX J

CHI-SQUARE DATA

Degree of Job Satisfaction

07.0101	<u>Non Co-op</u>		<u>Co-op</u>	
	+	-	+	-
	91	52	39	9
	122	29	56	4
	1	1	3	0
	1	1	3	0
	20	1	19	1
	16	1	4	0
	<u>251</u>	<u>85</u>	<u>133</u>	<u>14</u>
	n = 336		n = 138	

07.0305	<u>Non Co-op</u>		<u>Co-op</u>	
	+	-	+	-
	72	54	8	6
	100	12	0	0
	66	45	8	5
	104	24	3	1
	49	15	8	3
	48	10	4	2
	<u>439</u>	<u>160</u>	<u>31</u>	<u>17</u>
	n = 599		n = 48	

07.0601	<u>Non Co-op</u>		<u>Co-op</u>	
	+	-	+	-
	15	0	26	6
	12	4	21	4
	221	66	268	52
	211	56	187	33
	15	5	3	0
	15	1	1	0
	144	51	134	19
	153	14	91	12
	74	26	91	16
	70	14	48	6
	454	194	610	110
	520	75	381	37
	<u>1,904</u>	<u>506</u>	<u>1,861</u>	<u>295</u>
	n = 2,410		n = 2,156	

APPENDIX K

INPUT FORM FOR CHI-SQUARE TEST

Wages 1981 07.0101

91	46
148	33
1982	
108	55
171	60

Wages 1981 07.0301

183	26
252	34
1982	
204	16
292	22

Wages 1981 07.0601

783	1044
1220	737
1982	
648	945
1351	853

Job Satisfaction 1981
07.0101

231	89
62	12
1982	
251	133
85	14

Job Satisfaction 1981
07.0301

396	168
59	11
1982	
439	31
160	17

job Satisfaction 1981
07.0601

1933	1484
1849	236
1982	
1904	1861
506	295

Attending School 1981
07.0101

326	106
227	66
1982	
356	119
255	5

Attending School 1981
07.0301

636	50
387	45
1982	
734	59
410	34

Attending School 1981
07.0601

1905	1557
2244	1524
1982	
2148	1665
2190	1423

Job Looking 1981
07.0101

234	45
298	122

Job Looking 1981
07.0301

392	26
568	59

Job Looking 1981
07.0601

1684	1018
2244	1866

1982

264	55
331	129

1982

517	31
58	688

1982

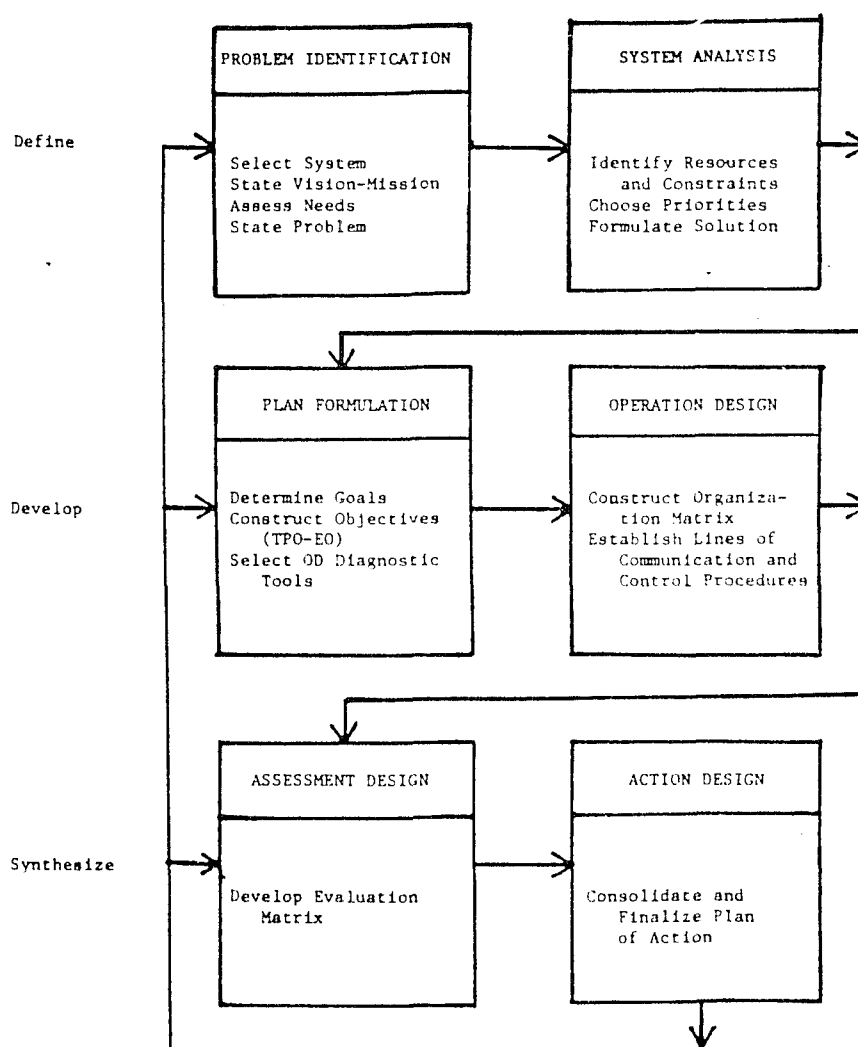
1966	1108
2242	1835

APPENDIX L

BLONDIN INSTRUCTIONAL DEVELOPMENT MODEL

Blondin Model

Blondin's organization development model (1977) provides the philosophic and structural framework for the Southeast Asia Instructional Development Institute (SAIDI). The Institute, located in Manila in the Philippines, is dedicated to improving the welfare of all the peoples of Southeast Asia. Her model serves as a guide for the many development services SAIDI provides to a variety of organizations, as well as the basis for a graduate program in instructional development.



Source: Blondin (1977).

The model has three stages: define, develop, and synthesize. Each stage has two steps and each step has one or more sub-steps. The SAIDI model is in part derived from the Instructional Development Institute (IDI) model reviewed earlier. Blondin has taken many of the IDI's steps and incorporated them into a more comprehensive view of the organization as the system for development.

In the defining stage, the first step is problem identification. Its sub-steps are to select the system for development, state the vision or mission of that system, conduct a needs assessment, and state the problem. The second step is to perform a system analysis. This includes identifying human, physical, and financial resources and assessing the desire of affected personnel to proceed. Constraints are also assessed and tested for their validity. Priorities are established among various areas of need, and tentative solutions are formulated.

Stage two--develop--begins with formulation of a plan, which includes determining goals for each element of the tentative solution as well as project objectives to measure progress toward the goals. Project objectives are an important part of the model and distinguish it from many development models which only require specification of learner objectives. In fact, the model does not assume that instruction is necessary to move toward solving the original problem. In the Blondin model, learner objectives are stated during formulation of the plan, but only if instruction will be part of the overall plan. Organization development diagnostic tools are also selected during formulation of the plan. Examples of such tools are action research, brainstorming, norm modification, force-field analysis, conflict resolution, surveying and developing the communication network, and training. The reader should note that training is only one of a variety of tools available to the user of this model.

Step four--operation design--begins with construction of an organization matrix. The matrix displays line relationships, function relationships, and role descriptions of all relevant personnel in the organization. Lines of communication and control procedures are then established in preparation for implementing the plan. The emphasis on planning for installation and concern for communication serve to emphasize the organization development orientation of her model. Clearly, the intent is to achieve a lasting change and create an environment in which continued development is more likely to occur.

Stage three has two steps, assessment design and action design. Assessment design specifies the development of an evaluation matrix to measure both intended and unintended outcomes. Formative evaluation plans are also developed at this time. A three-part structure is suggested for structuring the evaluation and collecting data on both processes and outcomes. One unique feature of her evaluation plan is estimating the value of expanding the effort to a larger or different organization. Also of interest to developers is the requirement that evaluation results be supplied to both project staff and key decision makers in the organization. Most models of the development process imply (by omission) that evaluation data should not be distributed outside the development team. By specifying external distribution of findings, Blondin hopes to create an open, honest environment where success and failure are visible, and both are understood to be part of the development process.

The last step is to design an action plan for implementing the proposed solution and assessment plan. Timelines are developed, commitments again obtained, operational personnel trained, and the necessary materials produced and distributed. With all elements defined, the plan is then implemented and assessed. Given the formative evaluation orientation of much of the assessment, it is expected that on-line modifications will be made as necessary to assure progress toward stated goals.

The major strength of Blondin's model is its recognition of the many organization elements which affect attempts to bring about change. Its focus on development which will build an organization committed to and able to carry out additional development makes this model noteworthy. Its greatest limitation is the lack of specific information on how each step is to be performed. Some steps (evaluation, objectives, and action design planning) are well specified, while others require developers to rely on their own judgement as to what should be done.

APPENDIX M

ACCOUNTING AND COMPUTING TASK LIST

Accounting and Computing Task List

A. HANDLING ACCOUNTS RECEIVABLE

1. Prepare monthly statements
2. Post the results of calculations
3. Compute charges
4. Post data to determine charge to customers on monthly bill
5. Prepare invoices to determine customer charges
6. Resolve irregular accounts
7. Enter charges and payments to customer accounts
8. Investigate incorrect billings
9. Enter billing information that will result in correct billing
10. Prepare special lists of billing instructions
11. Apply overpayments to charges
12. Review the customer accounts using the accounts receivable ledger to prepare bills for accounts not previously billed
13. Process final bills
14. Accept payments from customers
15. Confer with customers having delinquent accounts

B. HANDLING ACCOUNTS PAYABLE

1. Prepare payment resulting in partial or total reduction of vendor account
2. Post amount of payment to update vendor's account
3. Answer vendor inquiries
4. Prepare Schedules of Accounts Payable

C. PREPARING FINANCIAL STATEMENTS

1. Compile reports
2. Prepare a trial balance
3. Prepare accounting records and reports to provide a formal recording of accounting data

D. KEEPING SPECIFIC RECORDS

1. Journalize double-entry transactions
2. Post transcriptions
3. Record freight shipment information
4. Examine accuracy of freight bills
5. Record freight receipt information
6. File a claim form to notify carrier of freight overcharge error
7. File a claim form
8. Reconcile bank statements to prove the accuracy of the company's cash balance
9. Post invoice amounts to update creditors' accounts
10. Complete loan application forms

11. Contact credit bureaus to check credit rating
12. Contact employers and references to check a loan application
13. Determine customer credit limits
14. Compute late charges
15. Maintain records to keep updated cost schedules
16. Examine records to prepare data for calculations
17. Compile productions or sales cost reports
18. Calculate data to determine cost for each job
19. Calculate individual items to compare sales or revenues to costs and overhead expenditures
20. Post information to update cost ledgers
21. Prepare reports using total cost, selling prices or rates, and profits to summarize cost data

E. PERFORMING PAYROLL AND PERSONNEL FUNCTIONS

1. Enroll employees in insurance plans
2. Process employee injury report forms
3. Process employee's application for weekly indemnity
4. File Workman's Compensation Form 111
5. Process dental and non-injury-related claim forms
6. Verify employee insurance payroll deductions
7. Update employee master insurance record
8. Cancel an employee's insurance coverage
9. Compute employee earnings to determine gross wages
10. Maintain up-to-date records
11. Prepare payroll records to compute net wages
12. Prepare paychecks
13. Distribute paychecks using designated distribution plan
14. Update individual ledgers
15. Adjust payroll records to correct incorrect amounts for previous pay periods
16. Prepare journal entries to record cash payment to employees and employee withholding amounts, as well as employer's tax liabilities
17. Prepare earnings and tax reports

F. MAINTAINING INVENTORY CONTROL RECORDS

1. Prepare purchase orders
2. Match office records
3. Initiate records to establish merchandise records
4. Count stock to compare physical inventory with inventory records
5. Compare inventories using other workers' figures and office records to verify computations against physical count of stock
6. Compute figures/balances to obtain current theoretical inventory value
7. Record adjustments to correct inventory records
8. Reorder items
9. Prepare reports to summarize inventory balances

G. PERFORMING MISCELLANEOUS ACCOUNTING AND COMPUTING FUNCTIONS

1. Verify entry accuracy
2. Audit accounts
3. Assign titles to incoming documents using account numbers and/or numbers to code
4. Verify accuracy of source documents using freight shipment papers to check for errors
5. Obtain financial data for use in maintaining accounting records by computing payments and receipts with the aid of calculating machines
6. Journalize results using source documents to record transactions
7. Post details of business transactions
8. Prepare report to show credit investigation results
9. Prepare duplicate bills
10. Identify sources of income
11. Verify calculations
12. Initiate corrections to adjust individual account balances so that records are accurate

H. PERFORMING OFFICE ACTIVITIES

1. Distribute documents to appropriate locations
2. File invoices
3. Sort source documents to allow for proper distribution of business forms
4. Calculate numerical data
5. Disburse information to inform customers or clients of company services
6. Answer inquiries concerning customer accounts
7. Maintain a systematic filing system
8. Manipulate switches, keys, and levers to activate a data-entry device
9. Manipulate switches, keys, and levers to deactivate a data-entry device
10. Analyze device malfunctions to determine whether it can be corrected by the operator or reported to a service firm
11. Manipulate switches, keys, and levers to correct malfunctions on a data-entry device
12. Manipulate switches, keys, and levers to execute standard service functions
13. Analyze a job instruction to determine record format operations
14. Manipulate switches, keys, and levers to create a program to control record format operations
15. Manipulate switches and levers to load a program to control record format operations
16. Manipulate knobs, levers, switches, and keys to load media onto or into a device for keying data

17. Manipulate keys, switches, and levers to select a program format for a specific record
18. Manipulate keys, switches, and levers to enter data onto a medium
19. Manipulate keys, switches, and levers to verify the data previously entered into a medium by a keying device
20. Analyze a data field to verify visually the data previously entered onto a medium by a keying device
21. Manipulate keys, switches, and levers to duplicate data from one record to another
22. Manipulate keys, levers, and switches to update data contained in an existing record
23. Write job information to create a log of completed work
24. Analyze written descriptions in technical manuals
25. Place media in a storage area to maintain a media file library in a logical sequence
26. Place media in protective containers

APPENDIX N

TRAINING STATION PROSPECTUS

TRAINING STATION PROSPECTUS

Company Name _____ Phone _____

Address _____
street and number city zip

Name and title of contact person _____

Type of training station _____

Distance from school _____

Number of employees _____

Entry level jobs available for cooperative education enrollees:

Date of initial contact _____

was a training station established _____ If not, why _____

Date of subsequent visitations _____

Degree of interest shown by training station _____

It is the policy of the school district that no person on the basis of race, color, religion, national origin or ancestry, age, sex, marital status or handicap should be discriminated against, excluded from participation in, denied the benefits of or otherwise be subjected to discrimination in any program or activity.

APPENDIX 0

COOPERATIVE EDUCATION STUDENT TRAINING
AGREEMENT

COOPERATIVE EDUCATION STUDENT TRAINING AGREEMENT

EMPLOYER _____ (Name of Business)	STUDENT NAME: _____
EMPLOYER IRS NUMBER _____	STREET: _____
STREET: _____	CITY: _____
CITY: _____ PHONE: _____	ZIP CODE: _____ PHONE: _____
FED. HAZARD. OCCUP. DEVIATION: ____ YES ____ NO	SOCIAL SECURITY NO. _____
SUPERVISOR: _____	DRIVER'S LICENSE NO. _____
DATE EMPLOYMENT BEGINS: _____	GRADE: _____ AGE: _____
WORKER'S DISABILITY: ____ YES ____ NO	BIRTH DATE: _____
UNDERWRITER: _____ (Carrier)	RATE OF PAY: _____
LIABILITY INSURANCE: ____ YES ____ NO	EXPECTED PROGRAM COMPLETION DATE: _____
UNDERWRITER: _____ (Carrier)	DAILY TIME SCHEDULE FROM _____ TO _____
	MAXIMUM WORK HR. WEEK _____
	CAREER OBJECTIVE: _____
	OCCUPATIONAL TITLE: _____
	NCES (USOE) CODE: _____

JOB TASKS AND ACTIVITIES	RELATED VOCATIONAL INSTRUCTION
The student will receive training from the employer (on the job) for the following work related tasks and activities:	The student will complete the following preparation in school:

EMPLOYER'S RESPONSIBILITY IN PROGRAM:

1. The student's training period shall be an average of 15 hours per week.
2. The training plan shall include job tasks and activities which are of vocational and educational value.
3. The employer shall complete a brief progress report (provided by the coordinator) each marking period indicating the trainee's progress on the job.
4. This training program agreed upon shall not be interrupted by either trainee or employer without consultation with the coordinator.
5. The employment of the trainee shall conform to all federal, state, local laws and regulations, including non-discrimination against any applicant or employee because of race, color, religion, age, marital status, sex, national origin or ancestry. This policy of non-discrimination shall apply also to otherwise qualified handicapped individuals.

TRAINEE'S RESPONSIBILITY IN PROGRAM:

1. Trainee will abide by the regulations and policies of the employer and the school.
2. Each trainee shall faithfully perform the assignments of the job and school program.
3. No trainee shall leave the training program without first receiving the consent of the co-od coordinator.

Approved _____ Date _____
Trainee _____

Parent _____

Coordinator _____

Employer _____

NOTE: (Employer must retain a copy of the completed training agreement at place of employment before a minor begins work.)

APPENDIX P

CHI-SQUARE DISTRIBUTION FOR GIVEN
PROBABILITY LEVELS

The chi-square distribution for given probability levels*

DF	PROBABILITY								
	0.99	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60
1	0.000	0.001	0.004	0.016	2.706	3.841	5.412	6.635	10.827
2	0.020	0.040	0.103	0.211	4.605	5.991	7.824	9.210	13.815
3	0.115	0.185	0.352	0.584	6.251	7.815	9.837	11.345	16.266
4	0.297	0.429	0.711	1.064	7.779	9.488	11.668	13.277	18.467
5	0.554	0.752	1.145	1.610	9.236	11.070	13.388	15.086	20.515
6	0.872	1.134	1.635	2.204	10.645	12.592	15.033	16.812	22.457
7	1.239	1.564	2.167	2.833	12.017	14.067	16.622	18.475	24.322
8	1.646	2.052	2.733	3.490	13.362	15.507	18.168	20.090	26.125
9	2.088	2.552	3.325	4.168	14.684	16.919	19.679	21.666	27.557
10	2.558	3.059	3.940	4.865	15.987	18.307	21.161	23.209	29.588
11	3.053	3.609	4.575	5.578	17.275	19.675	22.618	24.725	31.264
12	3.571	4.178	5.226	6.304	18.549	21.026	24.054	26.217	32.909
13	4.107	4.765	5.892	7.042	19.812	22.362	25.472	27.688	34.528
14	4.660	5.368	6.571	7.790	21.064	23.685	26.873	29.141	36.123
15	5.229	5.985	7.261	8.547	22.307	24.996	28.259	30.578	37.697
16	5.812	6.614	7.962	9.312	23.542	26.296	29.633	32.000	39.252
17	6.408	7.255	8.672	10.085	24.769	27.587	30.995	33.409	40.790
18	7.015	7.906	9.390	10.865	25.989	28.869	32.346	34.805	42.312
19	7.633	8.567	10.117	11.651	27.204	30.144	33.657	36.191	43.820
20	8.260	9.237	10.851	12.443	28.412	31.410	35.020	37.566	45.315
21	8.897	9.915	11.591	13.240	29.615	32.671	36.343	38.932	46.797
22	9.542	10.600	12.338	14.041	30.813	33.924	37.659	40.289	48.268
23	10.196	11.293	13.091	14.848	32.007	35.172	38.968	41.638	49.728
24	10.856	11.992	13.848	15.659	33.196	36.415	40.270	42.980	51.179
25	11.524	12.697	14.611	16.473	34.382	37.652	41.566	44.314	52.620
26	12.198	13.409	15.379	17.292	35.563	38.885	42.856	45.642	54.052
27	12.879	14.125	16.151	18.114	36.741	40.113	44.140	46.963	55.476
28	13.565	14.847	16.928	18.939	37.916	41.337	45.419	48.278	56.893
29	14.256	15.574	17.708	19.768	39.087	42.557	46.693	49.588	58.302
30	14.953	16.306	18.493	20.599	40.256	43.773	47.962	50.892	59.703
32	16.362	17.783	20.072	22.271	42.555	46.194	50.457	53.456	62.457
34	17.789	19.275	21.664	23.952	44.903	48.602	52.995	56.001	65.247
36	19.233	20.783	23.269	25.643	47.212	50.999	55.489	58.619	67.985
38	20.691	22.304	24.884	27.343	49.513	53.384	57.969	61.162	70.703
40	22.164	23.838	26.509	29.051	51.805	55.759	60.436	63.691	73.402
42	23.650	25.383	28.144	30.765	54.080	58.124	62.892	66.206	76.084
44	25.148	26.939	29.787	32.487	56.369	60.481	65.337	68.710	78.750
46	26.657	28.504	31.439	34.215	58.641	62.830	67.771	71.201	81.400
48	28.177	30.080	33.098	35.949	60.907	65.171	70.197	73.683	84.037
50	29.707	31.664	34.764	37.689	63.167	67.505	72.613	76.154	86.661
52	31.246	33.256	36.437	39.433	65.422	69.832	75.021	78.616	89.272
54	32.793	34.856	38.116	41.183	67.673	72.153	77.422	81.069	91.872
56	34.350	36.464	39.801	42.937	69.919	74.468	79.815	83.513	94.461
58	35.913	38.078	41.492	44.696	72.160	76.778	82.201	85.950	97.039
60	37.485	39.699	43.188	46.459	74.397	79.062	84.580	88.379	99.607
62	39.063	41.327	44.889	48.226	76.630	81.381	86.953	90.802	102.166
64	40.649	42.960	46.593	49.996	78.860	83.675	89.320	93.217	104.716
66	42.240	44.599	48.305	51.770	81.085	85.965	91.681	95.626	107.258
68	43.838	46.244	50.020	53.548	83.308	88.250	94.037	98.028	109.791
70	45.442	47.893	51.730	55.329	85.527	90.531	96.388	100.425	112.317

* Adapted from Fisher and Yates, *Statistical Tables for Biological, Agricultural and Medical Research*. Table 4 published by Longman Group Ltd., London (previously published by Oliver and Boyd, Edinburgh) by permission of the authors and publishers.

APPENDIX Q

CHI-SQUARE TEST OF STATISTICAL SIGNIFICANCE

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1981--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2560	741	3301
2	336	259	595
TOTAL	2896	1000	3896

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2453.72	847.28	3301.00
2	442.28	152.72	595.00
TOTAL	2896.00	1000.00	3896.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	65.71	19.02	84.73
2	8.62	6.65	15.27
TOTAL	74.33	25.67	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	62.98	21.75	84.73
2	11.35	3.92	15.27
TOTAL	74.33	25.67	100.00

Chi-square with continuity correction factor = 116.331
 Chi-square without continuity correction factor = 117.434
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1982--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2594	2025	4619
2	751	326	1077
TOTAL	3345	2351	5696

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2712.53	1906.47	4619.00
2	632.47	444.53	1077.00
TOTAL	3345.00	2351.00	5696.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	45.54	35.55	81.09
2	13.18	5.72	18.91
TOTAL	58.73	41.27	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	47.62	33.47	81.09
2	11.10	7.80	18.91
TOTAL	58.73	41.27	100.00

Chi-square with continuity correction factor = 65.805
 Chi-square without continuity correction factor = 66.364
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1981--JOB SEEKING

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2310	1689	3999
2	3110	2047	5157
TOTAL	5420	3736	9156

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2367.25	1631.75	3999.00
2	3052.75	2104.25	5157.00
TOTAL	5420.00	3736.00	9156.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	25.22	18.44	43.67
2	33.96	22.35	56.32
TOTAL	59.08	40.79	99.99

EXPECTED PERCENTAGES

	1	2	TOTAL
1	25.85	17.81	43.67
2	33.33	22.97	56.32
TOTAL	59.18	40.78	99.99

Chi-square with continuity correction factor = 5.921
 Chi-square without continuity correction factor = 6.025
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1982--JOB SEEKING

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2747	1195	3942
2	2631	2652	5283
TOTAL	5378	3847	9225

EXPECTED FREQUENCIES

	1	2	TOTAL
1	29.78	12.95	42.73
2	28.52	28.75	57.27
TOTAL	58.30	41.70	100.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1			
2			
TOTAL			

EXPECTED PERCENTAGES

	1	2	TOTAL
1	24.91	17.82	42.73
2	33.39	23.88	57.27
TOTAL	58.30	41.70	100.00

Chi-square with continuity correction factor = 366.327
 Chi-square without continuity correction factor = 367.144
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1982--CONTINUING EDUCATION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	3238	1843	5081
2	2855	1532	4387
TOTAL	6093	3375	9468

EXPECTED FREQUENCIES

	1	2	TOTAL
1	3269.81	1811.19	5081.00
2	2823.19	1563.81	4387.00
TOTAL	6093.00	3375.00	9468.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	34.20	19.47	53.66
2	30.15	16.18	46.34
TOTAL	64.35	35.65	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
34.54	19.13	53.66	
2	29.82	16.52	46.34
TOTAL	64.35	35.65	100.00

Chi-square with continuity correction factor = 1.815
 Chi-square without continuity correction factor = 1.873
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1981--CONTINUING EDUCATION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2867	1713	4580
2	2858	1635	4493
TOTAL	5725	3348	9073

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2889.95	1690.05	4580.00
2	2835.05	1657.95	4493.00
TOTAL	5725.00	3348.00	9073.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	31.60	18.88	50.48
2	31.50	18.02	49.52
TOTAL	63.10	36.90	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	31.85	18.63	50.48
2	31.25	18.27	49.52
TOTAL	63.10	36.90	100.00

Chi-square with continuity correction factor = 0.954
 Chi-square without continuity correction factor = 0.997
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1981--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1057	1116	2173
2	1620	804	2424
TOTAL	2677	1920	4597

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1265.42	907.58	2173.00
2	1411.58	1012.42	2424.00
TOTAL	2677.00	1920.00	4597.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	22.99	24.28	47.27
2	35.24	17.49	52.73
TOTAL	58.23	41.77	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	27.53	19.74	47.27
2	30.71	22.02	52.73
TOTAL	58.23	41.77	100.00

Chi-square with continuity correction factor = 155.117
 Chi-square without continuity correction factor = 155.864
 df = 1

CHI SQUARE TESTS FOR ALL VOCATIONAL BUSINESS EDUCATION
PROGRAM COMPLETERS, 1982--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	960	1016	1976
2	1814	935	2749
TOTAL	2774	1951	4725

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1160.09	815.91	1976.00
2	1613.91	1135.09	2749.00
TOTAL	2774.00	1951.00	4725.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	20.32	21.50	41.82
2	38.39	19.79	58.18
TOTAL	58.71	41.29	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	24.55	17.27	41.82
2	34.16	24.02	58.18
TOTAL	58.71	41.29	100.00

Chi-square with continuity correction factor = 142.941
 Chi-square without continuity correction factor = 143.658
 df = 1

CHI SQUARE TESTS FOR 070101--1982 WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	251	133	384
2	85	14	99
TOTAL	336	147	483

EXPECTED FREQUENCIES

	1	2	TOTAL
1	267.13	116.87	384.00
2	68.87	30.13	99.00
TOTAL	336.00	147.00	483.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	51.97	27.54	79.50
2	17.60	2.90	20.50
TOTAL	69.57	30.43	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	55.31	24.20	79.50
2	14.26	6.24	20.50
TOTAL	69.57	30.43	100.00

Chi-square with continuity correction factor = 14.661
 Chi-square without continuity correction factor = 15.614
 df = 1

CHI SQUARE TESTS FOR 070601--1982 JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	439	31	470
2	160	17	177
TOTAL	599	48	647

EXPECTED FREQUENCIES

	1	2	TOTAL
1	435.13	34.87	470.00
2	163.87	13.13	177.00
TOTAL	599.00	48.00	647.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	67.85	4.79	72.64
2	24.73	2.63	27.36
TOTAL	92.58	7.42	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	67.25	5.39	72.64
2	25.33	2.03	27.36
TOTAL	92.58	7.42	100.00

Chi-square with continuity correction factor = 1.285

Chi-square without continuity correction factor = 1.695

df = 1

CHI SQUARE TESTS FOR 070601 1982--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1904	1861	3765
2	506	295	801
TOTAL	2410	2156	4566

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1987.22	1777.78	3765.00
2	422.78	378.22	801.00
TOTAL	2410.00	2156.00	4566.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	41.70	40.76	82.46
2	11.08	6.46	17.54
TOTAL	52.78	47.22	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	43.52	38.94	82.46
2	9.26	8.28	17.54
TOTAL	52.78	47.22	100.00

Chi-square with continuity correction factor = 41.569
 Chi-square without continuity correction factor = 42.073
 df = 1

CHI SQUARE TESTS FOR 070601 1981--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1933	484	2417
2	1849	236	2085
TOTAL	3782	720	4502

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2030.45	386.55	2417.00
2	1751.55	333.45	2085.00
TOTAL	3782.00	720.00	4502.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	42.94	10.75	53.69
2	41.07	5.24	46.31
TOTAL	84.01	15.99	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	45.10	8.59	53.69
2	38.91	7.41	46.31
TOTAL	84.01	15.99	100.00

Chi-square with continuity correction factor = 62.502
 Chi-square without continuity correction factor = 63.148
 df = 1

CHI SQUARE TESTS FOR 070301 1981--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	396	168	564
2	59	11	70
TOTAL	455	179	634

EXPECTED FREQUENCIES

	1	2	TOTAL
1	404.76	159.24	564.00
2	50.24	19.76	70.00
TOTAL	455.00	179.00	634.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	62.46	26.50	88.96
2	9.31	1.74	11.04
TOTAL	71.77	28.23	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	63.84	25.12	88.96
2	7.92	3.12	11.04
TOTAL	71.77	28.23	100.00

Chi-square with continuity correction factor = 5.412
 Chi-square without continuity correction factor = 6.087
 df = 1

CHI SQUARE TESTS FOR 070101 1981--JOB SATISFACTION

OBSERVED FREQUENCIES

	1	2	TOTAL
1	231	89	320
2	62	12	74
TOTAL	293	101	394

EXPECTED FREQUENCIES

	1	2	TOTAL
1	237.97	82.03	320.00
2	55.03	18.97	74.00
TOTAL	293.00	101.00	394.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	58.63	22.59	81.22
2	15.74	3.05	18.78
TOTAL	74.37	25.63	100.000

EXPECTED PERCENTAGES

	1	2	TOTAL
1	60.40	20.82	81.22
2	13.97	4.81	18.78
TOTAL	74.37	25.63	100.00

Chi-square with continuity correction factor = 3.653
 Chi-square without continuity correction factor = 4.240
 df = 1

CHI SQUARE TESTS FOR 070101 1981--ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	326	106	432
2	227	66	293
TOTAL	553	172	725

EXPECTED FREQUENCIES

	1	2	TOTAL
1	329.51	102.49	432.00
2	223.49	69.51	293.00
TOTAL	553.00	172.00	725.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	44.97	14.62	59.59
2	31.31	9.10	40.41
TOTAL	76.28	23.72	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	45.45	14.14	59.59
2	30.83	9.59	40.41
TOTAL	76.28	23.72	100.00

Chi-square with continuity correction factor = 0.287

Chi-square without continuity correction factor = 0.390

df = 1

CHI SQUARE TESTS FOR 070601 1981--ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1905	1557	3462
2	2244	1524	3768
TOTAL	4149	3081	7230

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1986.70	1475.30	3462.00
2	2162.30	1605.70	3768.00
TOTAL	4149.00	3081.00	7230.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	26.35	21.54	47.88
2	31.04	21.08	52.12
TOTAL	57.39	42.61	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	27.48	20.41	47.88
2	29.91	22.21	52.12
TOTAL	57.39	42.61	100.00

Chi-square with continuity correction factor = 14.943
 Chi-square without continuity correction factor = 15.128
 df = 1

CHI SQUARE TESTS FOR 070301 1981--ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	636	50	686
2	387	45	432
TOTAL	1023	95	1118

EXPECTED FREQUENCIES

	1	2	TOTAL
1	627.71	58.29	686.00
2	395.29	36.71	432.00
TOTAL	1023.00	95.00	1118.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	56.89	4.47	61.36
2	34.62	4.03	38.64
TOTAL	91.50	8.50	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	56.15	5.21	61.36
2	35.36	3.28	38.64
TOTAL	91.50	8.50	100.00

Chi-square with continuity correction factor = 2.946

Chi-square without continuity correction factor = 3.336

df = 1

CHI SQUARE TESTS FOR 070301--ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	734	59	793
2	410	34	444
TOTAL	1144	93	1237

EXPECTED FREQUENCIES

	1	2	TOTAL
1	733.38	59.62	793.00
2	410.62	33.38	444.00
TOTAL	1144.00	93.00	1237.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	59.34	4.77	64.11
2	33.14	2.75	35.89
TOTAL	92.48	7.52	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	59.29	4.82	64.11
2	33.19	2.70	35.89
TOTAL	92.48	7.52	100.00

Chi-square with continuity correction factor = 0.001
 Chi-square without continuity correction factor = 0.019
 df = 1

CHI SQUARE TESTS FOR 070101 1982---ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	356	119	475
2	255	75	330
TOTAL	611	194	805

EXPECTED FREQUENCIES

	1	2	TOTAL
1	360.53	114.47	475.00
2	250.47	79.53	330.00
TOTAL	611.00	194.00	805.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	44.22	14.78	59.01
2	31.68	9.32	40.99
TOTAL	75.90	24.10	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	44.79	14.22	59.01
2	31.11	9.88	40.99
TOTAL	75.90	24.10	100.00

Chi-square with continuity correction factor = 0.456
 Chi-square without continuity correction factor = 0.576
 df = 1

CHI SQUARE TESTS FOR 070601 1982--ATTENDING SCHOOL

OBSERVED FREQUENCIES

	1	2	TOTAL
1	2148	1665	3813
2	2190	1423	3613
TOTAL	4338	3088	7426

EXPECTED FREQUENCIES

	1	2	TOTAL
1	2227.42	1585.58	3813.00
2	2110.58	1502.42	3613.00
TOTAL	4338.00	3088.00	7426.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	28.93	22.42	51.35
2	29.49	19.16	48.65
TOTAL	58.42	41.58	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
29.99	21.35	51.35	
2	28.42	20.23	48.65
TOTAL	58.42	41.58	100.00

Chi-square with continuity correction factor = 13.820
 Chi-square without continuity correction factor = 13.995
 df = 1

CHI SQUARE TESTS FOR 070101 1981--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	234	45	279
2	298	122	420
TOTAL	532	167	699

EXPECTED FREQUENCIES

	1	2	TOTAL
1	212.34	66.66	279.00
2	319.66	100.34	420.00
TOTAL	532.00	167.00	699.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	33.48	6.44	39.91
2	42.63	17.45	60.09
TOTAL	76.11	23.89	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	30.38	9.54	39.91
2	45.73	14.36	60.09
TOTAL	76.11	23.89	100.00

Chi-square with continuity correction factor = 14.684
 Chi-square without continuity correction factor = 15.386
 df = 1

CHI SQUARE TESTS FOR 070301 1981--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	392	26	418
2	568	59	627
TOTAL	960	85	1045

EXPECTED FREQUENCIES

	1	2	TOTAL
1	384.00	34.00	418.00
2	576.00	51.00	627.00
TOTAL	960.00	85.00	1045.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	37.51	2.49	40.00
2	54.35	5.65	60.00
TOTAL	91.87	8.13	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	36.75	3.25	40.00
2	55.12	4.88	60.00
TOTAL	91.87	8.13	100.00

Chi-square with continuity correction factor = 3.001
 Chi-square without continuity correction factor = 3.415
 df = 1

CHI SQUARE TESTS FOR 070601 1981--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1684	1018	2702
2	2244	1866	4110
TOTAL	3928	2884	6812

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1558.05	1143.95	2702.00
2	2369.95	1740.05	4110.00
TOTAL	3928.00	2884.00	6812.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	24.72	14.94	39.67
2	32.94	27.39	60.33
TOTAL	57.66	42.34	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	22.87	16.79	39.67
2	34.79	25.54	60.33
TOTAL	57.66	42.34	100.00

Chi-square with continuity correction factor = 39.541

Chi-square without continuity correction factor = 39.857

df = 1

CHI SQUARE TESTS FOR 070101 1982--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	264	55	319
2	331	129	460
TOTAL	595	184	779

EXPECTED FREQUENCIES

	1	2	TOTAL
1	243.65	75.35	319.00
2	351.35	108.65	460.00
TOTAL	595.00	184.00	779.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	33.89	7.06	40.95
2	42.49	16.56	59.05
TOTAL	76.38	23.62	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	31.28	9.67	40.95
2	45.10	13.95	59.05
TOTAL	76.38	23.62	100.00

Chi-square with continuity correction factor = 11.592
 Chi-square without continuity correction factor = 12.183
 df = 1

CHI SQUARE TESTS FOR 070301 1982--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	517	31	548
2	58	688	746
TOTAL	575	709	1294

EXPECTED FREQUENCIES

	1	2	TOTAL
1	243.51	304.49	548.00
2	331.49	414.51	746.00
TOTAL	575.00	719.00	1294.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	39.95	2.40	42.35
2	4.48	53.17	57.65
TOTAL	44.44	55.56	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	18.82	23.53	42.35
2	25.62	32.03	57.65
TOTAL	44.44	55.56	100.00

Chi-square with continuity correction factor = 955.399
 Chi-square without continuity correction factor = 958.902
 df = 1

CHI SQUARE TESTS FOR 070601 1982--LOOKING FOR A JOB

OBSERVED FREQUENCIES

	1	2	TOTAL
1	1966	1109	3075
2	2242	1835	4077
TOTAL	4208	2944	7152

EXPECTED FREQUENCIES

	1	2	TOTAL
1	1809.23	1265.77	3075.00
2	2398.77	1678.23	4077.00
TOTAL	4208.00	2944.00	7152.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	27.49	15.51	42.99
2	31.35	25.66	57.01
TOTAL	58.84	41.16	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	25.30	17.70	42.99
2	33.54	23.47	57.01
TOTAL	58.84	41.16	100.00

Chi-square with continuity correction factor = 57.523
 Chi-square without continuity correction factor = 57.892
 df = 1

CHI SQUARE TESTS FOR 070101 1981--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	91	46	137
2	148	33	181
TOTAL	239	79	318

EXPECTED FREQUENCIES

	1	2	TOTAL
1	102.97	34.03	137.00
2	136.03	44.97	181.00
TOTAL	239.00	79.00	318.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	28.62	14.47	43.08
2	46.54	10.38	56.92
TOTAL	75.16	24.84	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	32.38	10.70	43.08
2	42.78	14.14	56.92
TOTAL	75.16	24.84	100.00

Chi-square with continuity correction factor = 9.029
 Chi-square without continuity correction factor = 9.834
 df = 1

CHI SQUARE TESTS FOR 070301 1981--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	183	26	209
2	252	34	286
TOTAL	435	60	495

EXPECTED FREQUENCIES

	1	2	TOTAL
1	183.67	25.33	209.00
2	251.33	34.67	286.00
TOTAL	435.00	60.00	495.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	36.97	5.25	42.22
2	50.91	6.87	57.78
TOTAL	87.88	12.12	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	37.10	5.12	42.22
2	50.77	7.00	57.78
TOTAL	87.88	12.12	100.00

Chi-square with continuity correction factor = 0.002
 Chi-square without continuity correction factor = 0.035
 df = 1

CHI SQUARE TESTS FOR 070601 1981--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	783	1044	1827
2	1220	737	1957
TOTAL	2003	1781	3784

EXPECTED FREQUENCIES

	1	2	TOTAL
1	967.09	859.91	1827.00
2	1035.91	921.09	1957.00
TOTAL	2003.00	1781.00	3784.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	20.69	27.59	48.28
2	32.24	19.48	51.72
TOTAL	52.93	47.07	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	25.56	22.72	48.28
2	27.38	24.34	51.72
TOTAL	52.93	47.07	100.00

Chi-square with continuity correction factor = 143.183
 Chi-square without continuity correction factor = 143.964
 df = 1

CHI SQUARE TESTS FOR 070101 1982--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	108	55	163
2	171	60	231
TOTAL	279	115	394

EXPECTED FREQUENCIES

	1	2	TOTAL
1	115.42	47.58	163.00
2	163.58	67.42	231.00
TOTAL	279.00	115.00	394.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	27.41	13.96	41.37
2	43.40	15.23	58.63
TOTAL	70.81	29.19	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	29.30	12.08	41.37
2	41.52	17.11	58.63
TOTAL	70.81	29.19	100.00

Chi-square with continuity correction factor = 2.427
 Chi-square without continuity correction factor = 2.790
 df = 1

CHI SQUARE TESTS FOR 070301 1982--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	204	16	220
2	292	22	314
TOTAL	496	38	534

EXPECTED FREQUENCIES

	1	2	TOTAL
1	204.34	15.66	220.00
2	291.66	22.34	314.00
TOTAL	496.00	38.00	534.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	38.20	3.00	41.20
2	54.68	4.12	58.80
TOTAL	92.88	7.12	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	38.27	2.93	41.20
2	54.62	4.18	58.80
TOTAL	92.88	7.12	100.00

Chi-square with continuity correction factor = 0.003
 Chi-square without continuity correction factor = 0.014
 df = 1

CHI SQUARE TESTS FOR 070601 1982--WAGES

OBSERVED FREQUENCIES

	1	2	TOTAL
1	648	945	1593
2	1351	853	2204
TOTAL	1999	1798	3797

EXPECTED FREQUENCIES

	1	2	TOTAL
1	838.66	754.34	1593.00
2	1160.34	1043.66	2204.00
TOTAL	1999.00	1798.00	3797.00

OBSERVED PERCENTAGES

	1	2	TOTAL
1	17.07	24.89	41.95
2	35.58	22.47	58.05
TOTAL	52.65	47.35	100.00

EXPECTED PERCENTAGES

	1	2	TOTAL
1	22.09	19.87	41.95
2	30.56	27.49	58.05
TOTAL	52.65	47.35	100.00

Chi-square with continuity correction factor = 156.873
 Chi-square without continuity correction factor = 157.699
 df = 1

APPENDIX R

RAW DATA FOR STUDY

DEGREE OF JOB SATISFACTION--1981

07.0101

<u>Non Co-op</u>		<u>Co-op</u>	
+	-	+	-
78	36	52	4
112	17	30	6
1	0	1	0
3	1	0	0
17	5	4	1
<u>20</u>	<u>3</u>	<u>2</u>	<u>1</u>
231	62	89	12
n = 293		n = 101	

07.0301

+	-	+	-
50	20	5	0
50	12	2	1
88	28	21	3
128	67	17	2
40	13	6	5
<u>40</u>	<u>8</u>	<u>8</u>	<u>0</u>
396	168	59	11
n = 564		n = 70	

07.0601

+	-	+	-
13	1	25	1
6	2	12	4
252	78	297	35
192	56	171	23
8	4	0	2
6	6	3	0
23	2	1	0
5	5	4	1
110	37	128	21
128	15	122	18
73	17	101	9
74	9	36	6
523	165	569	87
<u>520</u>	<u>87</u>	<u>380</u>	<u>29</u>
1,933	484	1,849	236
n = 2,417		n = 2,085	

DEGREE OF SATISFACTION WITH JOB: 1981 COMPLETERS

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0102		
n = 476		
Very satisfied	78	32.10
Somewhat satisfied	112	46.09
Not very satisfied	36	14.81
Not at all satisfied	17	14.81
Number responding	243	

14.0104		
n = 14		
Very satisfied	1	20.00
Somewhat satisfied	3	60.00
Not very satisfied		
Not at all satisfied	1	20.00
Number responding	5	

14.0105		
n = 68		
Very satisfied	17	37.78
Somewhat satisfied	20	44.44
Not very satisfied	5	11.11
Not at all satisfied	3	6.67
Number responding	45	

N = 558
n = 293

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0102		
n = 158		
Very satisfied	52	56.52
Somewhat satisfied	30	32.61
Not very satisfied	4	4.35
Not at all satisfied	6	4.35
Number responding	92	

14.0104		
n = 6		
Very satisfied	1	100.00
Somewhat satisfied		
Not very satisfied		
Not at all satisfied		
Number responding	1	

14.0105		
n = 9		
Very satisfied	4	50.00
Somewhat satisfied	2	25.00
Not very satisfied	1	12.50
Not at all satisfied	1	12.50
Number responding	8	

N = 173
n = 101

DEGREE OF SATISFACTION WITH JOB: 1981 COMPLETERS

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0200		
n = 230		
Very satisfied	50	37.88
Somewhat satisfied	50	37.88
Not very satisfied	20	15.15
Not at all satisfied	12	15.15
Number responding	132	

14.0201		
n = 558		
Very satisfied	88	28.30
Somewhat satisfied	128	41.16
Not very satisfied	67	21.54
Not at all satisfied	28	9.00
Number responding	311	

14.0203		
n = 245		
Very satisfied	40	39.60
Somewhat satisfied	40	39.60
Not very satisfied	13	12.87
Not at all satisfied	8	7.92
Number responding	101	

N = 1033
n = 544

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0200		
n = 12		
Very satisfied	5	62.50
Somewhat satisfied	2	25.00
Not very satisfied		
Not at all satisfied	1	12.50
Number responding	8	

14.0201		
n = 59		
Very satisfied	21	48.84
Somewhat satisfied	17	39.53
Not very satisfied	3	6.98
Not at all satisfied	2	4.65
Number responding	43	

14.0203		
n = 25		
Very satisfied	6	31.58
Somewhat satisfied	8	42.11
Not very satisfied	5	26.32
Not at all satisfied	0	
Number responding	19	

N = 96
n = 70

DEGREE OF SATISFACTION WITH JOB: 1981 COMPLETERS

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0303		
n = 58		
Very satisfied	13	59.09
Somewhat satisfied	6	27.27
Not very satisfied	1	4.55
Not at all satisfied	2	9.09
Number responding	22	

14.0703		
n = 931		
Very satisfied	252	43.60
Somewhat satisfied	192	33.22
Not very satisfied	78	13.49
Not at all satisfied	56	9.69
Number responding	578	

14.0797		
n = 48		
Very satisfied	8	33.33
Somewhat satisfied	6	25.00
Not very satisfied	4	16.67
Not at all satisfied	6	25.00
Number responding	24	

14.9800		
n = 2,294		
Very satisfied	523	40.39
Somewhat satisfied	520	40.15
Not very satisfied	165	12.74
Not at all satisfied	87	6.72
Number responding	1,295	

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0303		
n = 63		
Very satisfied	25	59.52
Somewhat satisfied	12	28.57
Not very satisfied	1	2.38
Not at all satisfied	4	9.52
Number responding	42	

14.0703		
n = 725		
Very satisfied	297	56.46
Somewhat satisfied	171	32.51
Not very satisfied	35	6.65
Not at all satisfied	23	4.37
Number responding	526	

14.0797		
n = 6		
Very satisfied		
Somewhat satisfied	3	60.000
Not very satisfied	2	40.00
Not at all satisfied		
Number responding	5	

14.9800		
n = 1,616		
Very satisfied	569	53.43
Somewhat satisfied	380	35.68
Not very satisfied	87	8.17
Not at all satisfied	29	2.72
Number responding	1,065	

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0798		
n = 46		
Very satisfied	23	65.71
Somewhat satisfied	5	14.29
Not very satisfied	2	5.71
Not at all satisfied	5	14.29
Number responding	35	

14.0901		
n = 526		
Very satisfied	110	37.93
Somewhat satisfied	128	44.14
Not very satisfied	37	12.76
Not at all satisfied	15	5.17
Number responding	290	

14.9700		
n = 295		
Very satisfied	73	42.20
Somewhat satisfied	74	42.77
Not very satisfied	17	9.83
Not at all satisfied	9	5.20
Number responding	173	

N = 4,198
n = 2,417

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0798		
n = 9		
Very satisfied	1	16.67
Somewhat satisfied	4	66.67
Not very satisfied	0	
Not at all satisfied	1	16.67
Number responding	6	

14.0901		
n = 492		
Very satisfied	128	44.29
Somewhat satisfied	122	42.21
Not very satisfied	21	7.27
Not at all satisfied	18	6.23
Number responding	289	

14.9700		
n = 220		
Very satisfied	101	66.45
Somewhat satisfied	36	23.68
Not very satisfied	9	5.92
Not at all satisfied	6	3.95
Number responding	152	

N = 3,131
n = 2,085

DEGREE OF JOB SATISFACTION--1982

07.0101

Non Co-Op

+	-
91	52
122	29
1	1
1	1
20	1
16	1
<u>251</u>	<u>85</u>
n = 336	

Co-op

+	-
39	9
56	4
3	0
3	0
19	1
4	0
<u>133</u>	<u>14</u>
n = 138	

07.0305

+	-
72	54
100	12
66	45
104	24
49	15
48	10
<u>439</u>	<u>160</u>
n = 599	

+	-
8	6
0	0
8	5
3	1
8	3
4	2
<u>31</u>	<u>17</u>
n = 48	

07.0601

+	-
15	0
12	4
221	66
211	56
15	5
15	1
144	51
153	14
74	26
70	14
454	194
<u>520</u>	<u>75</u>
1,904	506
n = 2,410	

+	-
26	6
21	4
268	52
187	33
3	0
1	0
134	19
91	12
91	16
48	6
610	110
<u>381</u>	<u>37</u>
1,863	295
n = 2,156	

DEGREE OF SATISFACTION WITH JOB: 1982 COMPLETERS

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0102		
n = 555		
Very satisfied	91	30.95
Somewhat satisfied	122	41.50
Not very satisfied	52	17.69
Not at all satisfied	29	9.86
Number responding	294	

14.0104		
n = 8		
Very satisfied	1	25.00
Somewhat satisfied	1	25.00
Not very satisfied	1	25.00
Not at all satisfied	1	25.00
Number responding	4	6

14.0105		
n = 57		
Very satisfied	20	52.63
Somewhat satisfied	16	42.11
Not very satisfied	1	2.63
Not at all satisfied	1	2.63
Number responding	38	

N = 620
n = 336

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0102		
n = 155		
Very satisfied	39	36.11
Somewhat satisfied	56	51.85
Not very satisfied	9	8.33
Not at all satisfied	4	3.70
Number responding	180	

14.0104		
n = 10		
Very satisfied	3	50.00
Somewhat satisfied	3	50.00
Not very satisfied	0	
Not at all satisfied	0	
Number responding		

14.0105		
n = 30		
Very satisfied	19	79.17
Somewhat satisfied	4	16.67
Not very satisfied	1	4.17
Not at all satisfied	0	
Number responding	24	

N = 195
n = 138

DEGREE OF SATISFACTION WITH JOB: 1982 COMPLETERS

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0200		
n = 476		
Very satisfied	72	30.25
Somewhat satisfied	100	42.02
Not very satisfied	54	22.69
Not at all satisfied	12	22.69
Number responding	238	

14.0201		
n = 428		
Very satisfied	66	27.62
Somewhat satisfied	104	43.51
Not very satisfied	45	18.83
Not at all satisfied	24	10.04
Number responding	239	

14.0203		
n = 245		
Very satisfied	49	40.16
Somewhat satisfied	48	39.34
Not very satisfied	15	12.30
Not at all satisfied	10	8.20
Number responding	122	

N = 1,149
n = 599

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0200		
n = 24		
Very satisfied	8	57.14
Somewhat satisfied	6	42.86
Not very satisfied	0	
Not at all satisfied	0	
Number responding	14	

14.0201		
n = 41		
Very satisfied	8	47.06
Somewhat satisfied	5	29.41
Not very satisfied	3	17.65
Not at all satisfied	1	5.88
Number responding	17	

14.0203		
n = 29		
Very satisfied	8	47.06
Somewhat satisfied	4	23.53
Not very satisfied	3	17.65
Not at all satisfied	2	11.76
Number responding	17	

N = 94
n = 48

DEGREE OF SATISFACTION WITH JOB: 1982 COMPLETERS

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0303		
n = 56		
Very satisfied	15	48.39
Somewhat satisfied	12	38.71
Not very satisfied	0	
Not at all satisfied	4	12.90
Number responding	31	

14.0703		
n = 944		
Very satisfied	221	39.89
Somewhat satisfied	211	38.09
Not very satisfied	66	11.91
Not at all satisfied	56	10.11
Number responding	554	

14.0797		
n = 56		
Very satisfied	15	41.67
Somewhat satisfied	15	41.67
Not very satisfied	5	13.89
Not at all satisfied	1	2.78
Number responding	36	

14.0798		
n = 42		
Very satisfied	15	45.45
Somewhat satisfied	6	18.18
Not very satisfied	8	24.24
Not at all satisfied	4	12.12
Number responding	33	

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0303		
n = 70		
Very satisfied	26	45.61
Somewhat satisfied	21	36.84
Not very satisfied	6	10.53
Not at all satisfied	4	7.02
Number responding	57	

14.0703		
n = 728		
Very satisfied	268	49.63
Somewhat satisfied	187	34.63
Not very satisfied	52	9.63
Not at all satisfied	33	6.11
Number responding	540	

14.0797		
n = 6		
Very satisfied	3	75.00
Somewhat satisfied	1	25.00
Not very satisfied	0	
Not at all satisfied	0	
Number responding	4	

14.0798		
n = NO DATA		
Very satisfied		
Somewhat satisfied		
Not very satisfied		
Not at all satisfied		
Number responding		

NON-COOPERATIVE-EDUCATION
PARTICIPATION

	n	%
14.0901		
n = 665		
Very satisfied	144	39.78
Somewhat satisfied	153	42.27
Not very satisfied	51	14.09
Not at all satisfied	14	3.87
Number responding	362	

14.9700		
n = 355		
Very satisfied	74	40.22
Somewhat satisfied	70	38.04
Not very satisfied	26	14.13
Not at all satisfied	14	7.61
Number responding	184	

14.9800		
n = 2,293		
Very satisfied	454	36.52
Somewhat satisfied	520	41.83
Not very satisfied	194	15.61
Not at all satisfied	75	6.03
Number responding	1,243	

N = 4,369
n = 2,410

COOPERATIVE EDUCATION
PARTICIPATION

	n	%
14.0901		
n = 403		
Very satisfied	134	52.34
Somewhat satisfied	91	35.55
Not very satisfied	19	7.42
Not at all satisfied	12	4.69
Number responding	256	

14.9700		
n = 243		
Very satisfied	91	56.52
Somewhat satisfied	48	29.81
Not very satisfied	16	9.94
Not at all satisfied	6	3.73
Number responding	161	

14.9800		
n = 1,667		
Very satisfied	610	53.60
Somewhat satisfied	381	33.48
Not very satisfied	110	9.67
Not at all satisfied	37	3.25
Number responding	1,138	

N = 3,117
n = 2,156

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1981

07.0101

Non Co-op

+	-
303	168
7	7
<u>16</u>	<u>52</u>
326	227
n = 553	

Co-op

+	-
102	56
3	3
<u>1</u>	<u>7</u>
106	66
n = 172	

07.0301

+	-
117	110
350	202
<u>169</u>	<u>75</u>
636	387
n = 1,023	

+	-
6	6
29	29
<u>15</u>	<u>10</u>
50	45
n = 95	

07.0601

+	-
23	31
429	492
23	24
15	31
233	284
125	169
<u>1,057</u>	<u>1,213</u>
1,905	2,244
n = 4,149	

+	-
25	28
381	339
5	1
2	7
226	259
123	96
<u>795</u>	<u>794</u>
1,557	1,524
n = 3,081	

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1981

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102
n = 158
YES 102
NO 56
Number responding 158

14.0104
n = 6
YES 3
NO 3
Number responding 6

14.0105
n = 9
YES 1
NO 7
Number responding 8

COOPERATIVE EDUCATION
PARTICIPATION

14.0102
n = 476
YES 303
NO 168
Number responding 471

14.0104
n = 14
YES 7
NO 7
Number responding 14

14.0105
n = 68
YES 16
NO 52
Number responding 68

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1981

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200
n = 12
YES 6
NO 6
Number responding 12

14.0201
n = 59
YES 29
NO 29
Number responding 58

14.0203
n = 25
YES 15
NO 10
Number responding 25

COOPERATIVE EDUCATION
PARTICIPATION

14.0200
n = 230
YES 117
NO 110
Number responding 227

14.0201
n = 558
YES 350
NO 202
Number responding 552

14.0203
n = 245
YES 169
NO 75
Number responding 244

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1981

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303
n = 63
YES 25
NO 28
Number responding 53

14.0703
n = 725
YES 381
NO 339
Number responding 720

14.0797
n = 6
YES 5
NO 1
Number responding 6

14.0798
n = 9
YES 2
NO 7
Number responding 9

COOPERATIVE EDUCATION
PARTICIPATION

14.0303
n = 58
YES 23
NO 31
Number responding 54

14.0703
n = 931
YES 429
NO 492
Number responding 921

14.0797
n = 48
YES 23
NO 24
Number responding 47

14.0798
n = 46
YES 15
NO 31
Number responding 46

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0901
n = 492
YES 226
NO 259
Number responding 485

14.9700
n = 220
YES 123
NO 96
Number responding 219

14.9800
n = 1,616
YES 795
NO 794
Number responding 1,589

COOPERATIVE EDUCATION
PARTICIPATION

14.09001
n = 526
YES 233
NO 284
Number responding 517

14.9700
n = 295
YES 125
NO 169
Number responding 294

14.9800
n = 2,294
YES 1,057
NO 1,213
Number responding 2,270

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1982

07.0101

Non Co-op

+	-
343	204
1	7
<u>12</u>	<u>44</u>
356	255
n = 611	

Co-op

+	-
104	50
5	5
<u>10</u>	<u>20</u>
119	75
n = 194	

07.0301

+	-
298	176
272	155
<u>164</u>	<u>79</u>
734	410
n = 1,144	

+	-
14	10
29	12
<u>16</u>	<u>12</u>
59	34
n = 93	

07.0601

+	-
26	30
481	455
28	28
330	331
178	175
<u>1,105</u>	<u>1,171</u>
2,148	2,190
n = 4,338	

+	-
33	37
379	340
3	3
198	196
134	108
<u>918</u>	<u>739</u>
1,165	1,423
n = 3,088	

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1982

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102
n = 555
YES 343 62.71
NO 204 37.29
Number responding 547

14.0104
n = 8
YES 1 12.50
NO 7 87.50
Number responding 8

14.0105
n = 57
YES 12 21.43
NO 44 78.57
Number responding 56

COOPERATIVE EDUCATION
PARTICIPATION

14.0102
n = 155
YES 104 67.53
NO 50 32.47
Number responding 154

14.0104
n = 10
YES 5 50.00
NO 5 50.00
Number responding 10

14.0105
n = 30
YES 10 33.33
NO 20 66.67
Number responding 30

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1982

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200
n = 476
YES 298 62.87
NO 176 37.13
Number responding 474

14.0201
n = 428
YES 272 63.70
NO 155 36.30
Number responding 427

14.0203
n = 245
YES 164 67.49
NO 79 32.51
Number responding 243

COOPERATIVE EDUCATION
PARTICIPATION

14.0200
n = 24
YES 14 58.33
NO 10 41.67
Number responding 24

14.0201
n = 41
YES 29 70.73
NO 12 29.27
Number responding 41

14.0203
n = 29
YES 16 57.14
NO 12 42.86
Number responding 28

ATTENDING A SCHOOL OR COLLEGE, ENROLLED IN A TRAINING PROGRAM,
WORKING AS AN APPRENTICE--1982

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303

n = 56

YES	26	46.43
NO	30	53.57
Number responding	56	

14.0703

n = 944

YES	481	51.39
NO	455	48.61
Number responding	936	

14.0797

n = 56

YES	28	50.00
NO	28	50.00
Number responding	56	

14.0798

n = 42

YES	11	
NO	31	
Number responding	42	

COOPERATIVE EDUCATION
PARTICIPATION

14.0303

n = 70

YES	33	47.14
NO	37	52.86
Number responding	70	

14.0703

n = 728

YES	379	52.71
NO	340	47.28
Number responding	719	

14.0797

n = 6

YES	3	50.00
NO	3	50.00
Number responding	6	

14.0798

n = NO DATA

YES		
NO		
Number responding		

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0901
n = 665
YES 330 49.92
NO 331 50.08
Number responding 661

14.9700
n = 355
YES 178 50.42
NO 175 49.58
Number responding 353

14.9800
n = 2,293
YES 1,105 48.55
NO 1,171 51.45
Number responding 2,276

COOPERATIVE EDUCATION
PARTICIPATION

14. 0901
n = 403
YES 198 50.25
NO 196 49.75
Number responding 394

14.9700
n = 243
YES 134 55.32
NO 108 44.63
Number responding 243

14.9800
n = 1,667
YES 918 55.40
NO 739 44.60
Number responding 1,657

LOOKING FOR A JOB--1981

07.0101

<u>Non Co-op</u>		<u>Co-op</u>	
+	-	+	-
191	263	41	111
7	5	1	5
<u>36</u>	<u>30</u>	<u>3</u>	<u>6</u>
234	298	45	122
n = 523		n = 167	

07.0301

+	-	+	-
94	111	4	5
221	300	13	38
<u>77</u>	<u>157</u>	<u>9</u>	<u>16</u>
392	568	26	59
n = 960		n = 85	

07.0601

+	-	+	-
17	34	14	37
384	501	251	445
19	27	2	2
17	27	3	6
238	269	191	278
114	153	67	113
<u>895</u>	<u>1,233</u>	<u>490</u>	<u>985</u>
1,684	2,244	1,018	1,866
n = 3,928		n = 2,884	

LOOKING FOR A JOB--1981

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102
 n = 476
 YES 191
 NO 263
 Number responding 454

14.0104
 n = 14
 YES 7
 NO 5
 Number responding 12

14.0105
 n = 68
 YES 36
 NO 30
 Number responding 66

COOPERATIVE EDUCATION
PARTICIPATION

14.0102
 n = 158
 YES 41
 NO 111
 Number responding 152

14.0104
 n = 6
 YES 1
 NO 5
 Number responding 6

14.0105
 n = 9
 YES 3
 NO 6
 Number responding 9

LOOKING FOR A JOB--1981

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200
 n = 230
 YES 94
 NO 111
 Number responding 205

14.0201
 n = 558
 YES 221
 NO 300
 Number responding 521

14.0203
 n = 245
 YES 77
 NO 157
 Number responding 234

COOPERATIVE EDUCATION
PARTICIPATION

14.0200
 n = 12
 YES 4
 NO 5
 Number responding 9

14.0201
 n = 59
 YES 13
 NO 38
 Number responding 51

14.0203
 n = 25
 YES 9
 NO 16
 Number responding 25

LOOKING FOR A JOB--1981

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303
 n = 58
 YES 17
 NO 34
 Number responding 51

14.0703
 n = 931
 YES 384
 NO 501
 Number responding 885

14.0797
 n = 48
 YES 19
 NO 27
 Number responding 46

14.0798
 n = 46
 YES 17
 NO 27
 Number responding 44

COOPERATIVE EDUCATION
PARTICIPATION

14.0303
 n = 63
 YES 14
 NO 37
 Number responding 51

14.0703
 n = 725
 YES 251
 NO 445
 Number responding 696

14.0797
 n = 6
 YES 2
 NO 2
 Number responding 4

14.0798
 n = 9
 YES 3
 NO 6
 Number responding 9

NON-COOPERATIVE-EDUCATION PARTICIPATION

14.0798
n = 526
YES 238
NO 269
Number responding 507

14.9700
n = 295
YES 114
NO 153
Number responding 267

14.9800
n = 2,294
YES 895
NO 1,233
Number responding 2,128

COOPERATIVE EDUCATION PARTICIPATION

14.0798
n = 492
YES 191
NO 278
Number responding 469

14.9700
n = 220
YES 67
NO 113
Number responding 180

14.9800
n = 1,616
YES 490
NO 985
Number responding 1,475

LOOKING FOR A JOB--1982

07.0101

Non-Co-op

+	-
249	292
4	4
<u>19</u>	<u>35</u>
264	331
n = 595	

Co-op

+	-
45	102
5	5
<u>5</u>	<u>22</u>
55	129
n = 184	

07.0301

+	-
251	217
178	239
<u>88</u>	<u>132</u>
517	688
n = 1,205	

+	-
9	15
16	24
<u>6</u>	<u>19</u>
31	58
n = 89	

07.0601

+	-
20	34
430	473
15	41
314	328
178	152
<u>1,009</u>	<u>1,214</u>
1,966	2,242
n = 4,208	

+	-
24	45
247	444
4	2
143	245
90	132
<u>601</u>	<u>967</u>
1,109	1,835
n = 2,944	

LOOKING FOR A JOB--1982

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102
n = 555
YES 249 46.03
NO 292 53.97
Number responding 541

14.0104
n = 8
YES 4 50.00
NO 4 50.00
Number responding 8

14.0105
n = 57
YES 19 35.19
NO 35 64.81
Number responding 54

COOPERATIVE EDUCATION
PARTICIPATION

14.0102
n = 155
YES 45 30.61
NO 102 69.39
Number responding 147

14.0104
n = 10
YES 5 50.00
NO 5 50.00
Number responding 10

14.0105
n = 30
YES 5 18.52
NO 22 81.48
Number responding 27

LOOKING FOR A JOB--1982

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200
n = 476
YES 251 53.63
NO 217 46.37
Number responding 468

14.0201
n = 428
YES 178 42.69
NO 239 57.31
Number responding 417

14.0203
n = 245
YES 88 40.00
NO 132 60.00
Number responding 220

COOPERATIVE EDUCATION
PARTICIPATION

14.0200
n = 24
YES 9 37.50
NO 15 62.50
Number responding 24

14.0201
n = 41
YES 16 40.00
NO 24 60.00
Number responding 40

14.0203
n = 29
YES 6 24.00
NO 19 76.00
Number responding 25

LOOKING FOR A JOB--1982

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303
n = 56
YES 20 37.04
NO 34 62.96
Number responding 54

14.0703
n = 944
YES 430 47.62
NO 473 52.38
Number responding 903

14.0797
n = 56
YES 15 26.79
NO 41 73.21
Number responding 56

14.0798
n = 42
YES 18 42.86
NO 24 57.14
Number responding 42

COOPERATIVE EDUCATION
PARTICIPATION

14.0303
n = 70
YES 24 34.78
NO 45 65.22
Number responding 69

14.0703
n = 728
YES 247 35.75
NO 444 64.25
Number responding 691

14.0797
n = 6
YES 4 66.67
NO 2 33.33
Number responding 6

14.0798
n = NO DATA
YES
NO
Number responding

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0901
n = 665
YES 314 48.91
NO 328 51.09
Number responding 642

14.9700
n = 355
YES 178 53.94
NO 152 46.06
Number responding 330

14.9800
n = 2,293
YES 1,009 45.39
NO 1,214 54.61
Number responding 2,223

COOPERATIVE EDUCATION
PARTICIPATION

14.0901
n = 403
YES 143 36.86
NO 245 63.14
Number responding 388

14.9700
n = 243
YES 90 40.54
NO 132 59.46
Number responding 222

14.9800
n = 1,667
YES 601 38.33
NO 967 61.67
Number responding 1,568

WAGES--1981

07.0101

Non Co-op

+	-
44	20
19	103
11	3
2	5
5	<u>17</u>
3	148
4	
2	
<u>1</u>	
91	

Co-op

+	-
18	3
13	27
3	1
3	<u>2</u>
3	33
1	
2	
2	
<u>1</u>	
46	

07.0301

+	-
15	10
5	53
6	8
3	121
7	1
58	<u>59</u>
21	252
20	
9	
14	
9	
5	
6	
3	
<u>2</u>	
183	

+	-
1	4
5	1
6	16
4	<u>5</u>
2	26
4	
4	
3	
3	
1	
<u>1</u>	
34	

07.0601

<u>Non Co-op</u>		<u>Co-op</u>	
+	-	+	-
6	6	10	14
3	39	4	12
2	247	6	161
3	1	1	3
1	13	3	1
85	2	113	1
40	9	39	15
30	25	58	122
9	123	32	4
17	10	32	46
3	82	2	34
2	90	1	<u>324</u>
2	<u>572</u>	69	737
8	1,220	18	
4		22	
4		3	
1		13	
57		34	
19		14	
7		15	
2		3	
14		12	
20		240	
8		116	
8		105	
3		33	
4		<u>46</u>	
220		1,044	
77			
70			
18			
<u>36</u>			
783			

WAGES--1981

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102
n = 476
\$0.01-\$3.34/hour 20
\$3.35-\$3.84/hour 103
\$3.85-\$4.34/hour 44
\$4.35-\$4.84/hour 19
\$4.85-\$5.34/hour 11
\$5.35-\$5.84/hour 2
\$5.85+/hour 5
Number responding 204

14.0104
n = 14
\$0.01-\$3.34/hour
\$3.35-\$3.84/hour 3
\$3.85-\$4.34/hour
\$4.35-\$4.84/hour
\$4.85-\$5.34/hour
\$5.35-\$5.84/hour
\$5.85+/hour
Number responding 3

14.0105
n = 68
\$0.01-\$3.34/hour 5
\$3.35-\$3.84/hour 17
\$3.85-\$4.34/hour 3
\$4.35-\$4.84/hour 4
\$4.85-\$5.34/hour 2
\$5.35-\$5.84/hour 2
\$5.85+/hour
Number responding 32

COOPERATIVE EDUCATION
PARTICIPATION

14.0102
n = 158
\$0.01-\$3.34/hour 3
\$3.35-\$3.84/hour 27
\$3.85-\$4.34/hour 18
\$4.35-\$4.84/hour 13
\$4.85-\$5.34/hour 3
\$5.35-\$5.84/hour 3
\$5.85+/hour 3
*Number responding 70

14.0104
n = 6
\$0.01-\$3.34/hour
\$3.35-\$3.84/hour
\$3.85-\$4.34/hour
\$4.35-\$4.84/hour
\$4.85-\$5.34/hour 1
\$5.35-\$5.84/hour
\$5.85+/hour
*Number responding 1

14.0105
n = 9
\$0.01-\$3.34/hour 1
\$3.35-\$3.84/hour 2
\$3.85-\$4.34/hour 2
\$4.35-\$4.84/hour 2
\$4.85-\$5.34/hour
\$5.35-\$5.84/hour 1
\$5.85+/hour
*Number responding 8

WAGES--1981

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200
n = 230
\$0.01-\$3.34/hour 10
\$3.35-\$3.84/hour 53
\$3.85-\$4.34/hour 15
\$4.35-\$4.84/hour 5
\$4.85-\$5.34/hour 6
\$5.35-\$5.84/hour 3
\$5.85+/hour 7
Number responding 99

14.0201
n = 558
\$0.01-\$3.34/hour 8
\$3.35-\$3.84/hour 121
\$3.85-\$4.34/hour 58
\$4.35-\$4.84/hour 21
\$4.85-\$5.34/hour 20
\$5.35-\$5.84/hour 9
\$5.85+/hour 14
Number responding 251

14.0203
n = 245
\$0.01-\$3.34/hour 1
\$3.35-\$3.84/hour 59
\$3.85-\$4.34/hour 9
\$4.35-\$4.84/hour 5
\$4.85-\$5.34/hour 6
\$5.35-\$5.84/hour 3
\$5.85+/hour 2
Number responding 85

COOPERATIVE EDUCATION
PARTICIPATION

14.0200
n = 12
\$0.01-\$3.34/hour
\$3.35-\$3.84/hour 4
\$3.85-\$4.34/hour 1
\$4.35-\$4.84/hour
\$4.85-\$5.34/hour
\$5.35-\$5.84/hour
\$5.85+/hour
*Number responding 5

14.0201
n = 59
\$0.01-\$3.34/hour 1
\$3.35-\$3.84/hour 16
\$3.85-\$4.34/hour 5
\$4.35-\$4.84/hour 6
\$4.85-\$5.34/hour 4
\$5.35-\$5.84/hour 2
\$5.85+/hour 4
*Number responding 38

14.0203
n = 25
\$0.01-\$3.34/hour
\$3.35-\$3.84/hour 5
\$3.85-\$4.34/hour 4
\$4.35-\$4.84/hour 3
\$4.85-\$5.34/hour 3
\$5.35-\$5.84/hour 1
\$5.85+/hour 1
*Number responding 17

WAGES--1981

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303

n = 58

\$0.01-\$3.34/hour	1
\$3.35-\$3.84/hour	5
\$3.85-\$4.34/hour	6
\$4.35-\$4.84/hour	3
\$4.85-\$5.34/hour	2
\$5.35-\$5.84/hour	3
\$5.85+/hour	1
Number responding	21

14.0703

n = 931

\$0.01-\$3.34/hour	39
\$3.35-\$3.84/hour	247
\$3.85-\$4.34/hour	85
\$4.35-\$4.84/hour	40
\$4.85-\$5.34/hour	30
\$5.35-\$5.84/hour	9
\$5.85+/hour	17
Number responding	467

14.0797

n = 48

\$0.01-\$3.34/hour	1
\$3.35-\$3.84/hour	13
\$3.85-\$4.34/hour	2
\$4.35-\$4.84/hour	
\$4.85-\$5.34/hour	3
\$5.35-\$5.84/hour	2
\$5.85+/hour	
Number responding	21

COOPERATIVE EDUCATION
PARTICIPATION

14.0303

n = 63

\$0.01-\$3.34/hour	
\$3.35-\$3.84/hour	14
\$3.85-\$4.34/hour	10
\$4.35-\$4.84/hour	4
\$4.85-\$5.34/hour	6
\$5.35-\$5.84/hour	1
\$5.85+/hour	3
*Number responding	38

14.0703

n = 725

\$0.01-\$3.34/hour	12
\$3.35-\$3.84/hour	161
\$3.85-\$4.34/hour	113
\$4.35-\$4.84/hour	39
\$4.85-\$5.34/hour	58
\$5.35-\$5.84/hour	32
\$5.85+/hour	32
*Number responding	447

14.0797

n = 6

\$0.01-\$3.34/hour	
\$3.35-\$3.84/hour	3
\$3.85-\$4.34/hour	
\$4.35-\$4.84/hour	
\$4.85-\$5.34/hour	
\$5.35-\$5.84/hour	
\$5.85+/hour	
*Number responding	3

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0798
n = 46
\$0.01-\$3.34/hour 2
\$3.35-\$3.84/hour 9
\$3.85-\$4.34/hour 8
\$4.35-\$4.84/hour 4
\$4.85-\$5.34/hour 4
\$5.35-\$5.84/hour 1
\$5.85+ /hour
Number responding 28

14.0901
n = 526
\$0.01-\$3.34/hour 25
\$3.35-\$3.84/hour 123
\$3.85-\$4.34/hour 57
\$4.35-\$4.84/hour 19
\$4.85-\$5.34/hour 7
\$5.35-\$5.84/hour 2
\$5.85+ /hour 14
Number responding 247

14.9700
n = 135
\$0.01-\$3.34/hour 10
\$3.35-\$3.84/hour 82
\$3.85-\$4.34/hour 20
\$4.35-\$4.84/hour 8
\$4.85-\$5.34/hour 8
\$5.35-\$5.84/hour 3
\$5.85+ /hour 4
Number responding 135

14.9800
n = 2,294
\$0.01-\$3.34/hour 90
\$3.35-\$3.84/hour 572
\$3.85-\$4.34/hour 220
\$4.35-\$4.84/hour 77
\$4.85-\$5.34/hour 70
\$5.35-\$5.84/hour 18
\$5.85+ /hour 36
Number responding 1,083

COOPERATIVE EDUCATION
PARTICIPATION

14.0798
n = 9
\$0.01-\$3.34/hour 1
\$3.35-\$3.84/hour 1
\$3.85-\$4.34/hour 2
\$4.35-\$4.84/hour 1
\$4.85-\$5.34/hour
\$5.35-\$5.84/hour
\$5.85+ /hour
*Number responding 5

14.0901
n = 492
\$0.01-\$3.34/hour 15
\$3.35-\$3.84/hour 122
\$3.85-\$4.34/hour 69
\$4.35-\$4.84/hour 18
\$4.85-\$5.34/hour 22
\$5.35-\$5.84/hour 3
\$5.85+ /hour 13
*Number responding 262

14.9700
n = 220
\$0.01-\$3.34/hour 4
\$3.35-\$3.84/hour 46
\$3.85-\$4.34/hour 34
\$4.35-\$4.84/hour 14
\$4.85-\$5.34/hour 15
\$5.35-\$5.84/hour 3
\$5.85+ /hour 12
*Number responding 128

14.9800
n = 1,616
\$0.01-\$3.34/hour 34
\$3.35-\$3.84/hour 324
\$3.85-\$4.34/hour 240
\$4.35-\$4.84/hour 116
\$4.85-\$5.34/hour 105
\$5.35-\$5.84/hour 33
\$5.85+ /hour 46
*Number responding 898

WAGES--1982

07.0101

Non Co-op		Co-op	
+	-	+	-
42	24	17	7
20	129	11	36
20	1	8	6
4	2	4	3
8	<u>15</u>	5	<u>8</u>
2	171	4	60
1		3	
6		2	
4		<u>1</u>	
<u>1</u>		55	
108			
n = 279		n = 115	

07.0301

+	-	+	-
34	13	1	1
15	114	1	5
13	7	3	9
2	96	4	<u>7</u>
8	6	1	22
46	<u>56</u>	1	
22	292	1	
10		2	
2		1	
7		<u>1</u>	
24		16	
10			
9			
1			
<u>3</u>			
206			
n = 498		n = 38	

07.0601

<u>Non Co-op</u>	
+	-
1	2
1	19
1	34
78	242
33	2
28	12
6	32
15	184
4	17
4	92
5	<u>635</u>
1	1,351
50	
17	
16	
2	
7	
20	
14	
7	
8	
165	
70	
73	
20	
<u>34</u>	
648	
n = 1,199	

<u>Co-op</u>	
+	-
13	2
5	21
4	14
3	195
3	3
78	9
47	100
54	3
14	64
28	32
46	<u>410</u>
30	853
22	
11	
10	
24	
15	
27	
4	
5	
198	
118	
100	
40	
<u>46</u>	
945	
n = 2,651	

WAGES--1982

07.0101 Accounting and Computing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0102

n = 555

\$0.01-\$3.34/hour	24	9.72
\$3.35-\$3.84/hour	129	52.23
\$3.85-\$4.34/hour	42	17.00
\$4.35-\$4.84/hour	20	8.10
\$4.85-\$5.34/hour	20	8.10
\$5.35-\$5.84/hour	4	1.62
\$5.85+/hour	8	3.24
Number responding	247	

14.00104

n = 8

\$0.01-\$3.34/hour		
\$3.35-\$3.84/hour	1	25.00
\$3.85-\$4.34/hour	2	50.00
\$4.35-\$4.84/hour	1	25.00
\$4.85-\$5.34/hour		
\$5.35-\$5.84/hour		
\$5.85+/hour		
Number responding	4	

14.0105

n = 57

\$0.01-\$3.34/hour	2	7.14
\$3.35-\$3.84/hour	15	53.57
\$3.85-\$4.34/hour	6	21.43
\$4.35-\$4.84/hour	4	12.29
\$4.85-\$5.34/hour	1	3.57
\$5.35-\$5.84/hour		
\$5.85+/hour		
Number responding	28	

COOPERATIVE EDUCATION
PARTICIPATION

14.0102

n = 155

\$0.01-\$3.34/hour	7	7.95
\$3.35-\$3.84/hour	36	40.91
\$3.85-\$4.34/hour	17	19.32
\$4.35-\$4.84/hour	11	12.50
\$4.85-\$5.34/hour	8	9.09
\$5.35-\$5.84/hour	5	4.55
\$5.85+/hour	5	5.68
*Number responding	88	

14.0104

n = 100

\$0.01-\$3.34/hour		
\$3.35-\$3.84/hour	6	100.00
\$3.85-\$4.34/hour		
\$4.35-\$4.84/hour		
\$4.85-\$5.34/hour		
\$5.35-\$5.84/hour		
\$5.85+/hour		
*Number responding	6	

14.0105

n = 30

\$0.01-\$3.34/hour	3	14.29
\$3.35-\$3.84/hour	8	38.10
\$3.85-\$4.34/hour	4	19.05
\$4.35-\$4.84/hour	3	14.29
\$4.85-\$5.34/hour	2	9.52
\$5.35-\$5.84/hour		
\$5.85+/hour	1	4.76
*Number responding	21	

WAGES---1982

07.0301 Business Data Processing

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0200

n = 476

\$0.01-\$3.34/hour	13	6.53
\$3.35-\$3.84/hour	114	57.29
\$3.85-\$4.34/hour	34	17.09
\$4.35-\$4.84/hour	15	7.54
\$4.85-\$5.34/hour	13	6.53
\$5.35-\$5.84/hour	2	1.01
\$5.85+/hour	8	4.02
Number responding	199	

14.0201

n = 428

\$0.01-\$3.34/hour	7	3.68
\$3.35-\$3.84/hour	96	50.53
\$3.85-\$4.34/hour	46	24.21
\$4.35-\$4.84/hour	22	11.58
\$4.85-\$5.34/hour	10	5.26
\$5.35-\$5.84/hour	2	1.05
\$5.85+/hour	7	3.68
Number responding	190	

14.0203

n = 245

\$0.01-\$3.34/hour	6	5.50
\$3.35-\$3.84/hour	56	51.38
\$3.85-\$4.34/hour	24	22.02
\$4.35-\$4.84/hour	10	9.17
\$4.85-\$5.34/hour	9	8.26
\$5.35-\$5.84/hour	1	.92
\$5.85+/hour	3	2.75
Number responding	109	

COOPERATIVE EDUCATION
PARTICIPATION

14.0200

n = 24

\$0.01-\$3.34/hour	1	9.09
\$3.35-\$3.84/hour	5	45.45
\$3.85-\$4.34/hour	1	9.09
\$4.35-\$4.84/hour	1	9.09
\$4.85-\$5.34/hour	3	27.27
\$5.35-\$5.84/hour		
\$5.85+/hour		
*Number responding	11	

14.0201

n = 41

\$0.01-\$3.34/hour		
\$3.35-\$3.84/hour	9	60.00
\$3.85-\$4.34/hour	4	26.67
\$4.35-\$4.84/hour	1	6.67
\$4.85-\$5.34/hour	1	6.67
\$5.35-\$5.84/hour		
\$5.85+/hour		
*Number responding	15	

14.0203

n = 29

\$0.01-\$3.34/hour		
\$3.35-\$3.84/hour	7	58.33
\$3.85-\$4.34/hour	1	8.33
\$4.35-\$4.84/hour	2	16.67
\$4.85-\$5.34/hour		
\$5.35-\$5.84/hour		
\$5.85+/hour	1	8.33
*Number responding	12	

WAGES--1982

07.0601 Secretarial

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0303

n = 56

\$0.01-\$3.34/hour	2	8.33
\$3.35-\$3.84/hour	19	79.17
\$3.85-\$4.34/hour	1	4.17
\$4.35-\$4.84/hour	1	4.17
\$4.85-\$5.34/hour	1	4.17
\$5.35-\$5.84/hour		
\$5.85+/hour		
Number responding	24	

14.0703

n = 944

\$0.01-\$3.34/hour	34	7.80
\$3.35-\$3.84/hour	242	55.50
\$3.85-\$4.34/hour	78	17.89
\$4.35-\$4.84/hour	33	7.57
\$4.85-\$5.34/hour	28	6.42
\$5.35-\$5.84/hour	6	1.38
\$5.85+/hour	15	3.44
Number responding	436	

14.0797

n = 56

\$0.01-\$3.34/hour	2	7.14
\$3.35-\$3.84/hour	12	42.86
\$3.85-\$4.34/hour	4	14.29
\$4.35-\$4.84/hour	4	14.29
\$4.85-\$5.34/hour	5	17.86
\$5.35-\$5.84/hour		
\$5.85+/hour	1	3.57
Number responding	27	

COOPERATIVE EDUCATION
PARTICIPATION

14.0303

n = 70

\$0.01-\$3.34/hour	2	3.92
\$3.35-\$3.84/hour	21	41.18
\$3.85-\$4.34/hour	13	25.49
\$4.35-\$4.84/hour	5	9.80
\$4.85-\$5.34/hour	4	7.84
\$5.35-\$5.84/hour	3	5.88
\$5.85+/hour	3	5.88
*Number responding	51	

14.0703

n = 728

\$0.01-\$3.34/hour	14	3.26
\$3.35-\$3.84/hour	195	45.35
\$3.85-\$4.34/hour	78	18.14
\$4.35-\$4.84/hour	47	10.93
\$4.85-\$5.34/hour	54	12.56
\$5.35-\$5.84/hour	14	3.26
\$5.85+/hour	28	6.51
*Number responding	430	

14.0797

n = 6

\$0.01-\$3.34/hour		
\$3.35-\$3.84/hour	3	100.0
\$3.85-\$4.34/hour		
\$4.35-\$4.84/hour		
\$4.85-\$5.34/hour		
\$5.35-\$5.84/hour		
\$5.85+/hour		
*Number responding	3	

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0901

n = 665

\$0.01-\$3.34/hour	32	10.39
\$3.35-\$3.84/hour	184	59.74
\$3.85-\$4.34/hour	50	16.23
\$4.35-\$4.84/hour	17	5.52
\$4.85-\$5.34/hour	16	5.19
\$5.35-\$5.84/hour	2	.65
\$5.85+/hour	7	2.27
Number responding	308	

14.9700

n = 355

\$0.01-\$3.34/hour	17	10.63
\$3.35-\$3.84/hour	92	57.50
\$3.85-\$4.34/hour	20	12.50
\$4.35-\$4.84/hour	14	8.75
\$4.85-\$5.34/hour	7	4.38
\$5.35-\$5.84/hour	2	1.25
\$5.85+/hour	8	5.00
Number responding	160	

14.9800

n = 2,293

\$0.01-\$3.34/hour	78	7.24
\$3.35-\$3.84/hour	637	59.15
\$3.85-\$4.34/hour	165	15.32
\$4.35-\$4.84/hour	70	6.50
\$4.85-\$5.34/hour	73	6.78
\$5.35-\$5.84/hour	20	1.86
\$5.85+/hour	34	3.16
Number responding	1,077	

COOPERATIVE EDUCATION
PARTICIPATION

14.0901

n = 403

\$0.01-\$3.34/hour	9	3.95
\$3.35-\$3.84/hour	100	43.86
\$3.85-\$4.34/hour	46	20.18
\$4.35-\$4.84/hour	30	13.16
\$4.85-\$5.34/hour	22	9.65
\$5.35-\$5.84/hour	10	4.82
\$5.85+/hour	10	4.39
*Number responding	228	

14.9700

n = 243

\$0.01-\$3.34/hour	3	2.11
\$3.35-\$3.84/hour	64	45.07
\$3.85-\$4.34/hour	24	16.90
\$4.35-\$4.84/hour	15	10.56
\$4.85-\$5.34/hour	27	19.01
\$5.35-\$5.84/hour	4	2.82
\$5.85+/hour	5	3.52
*Number responding	142	

14.9800

n = 1,667

\$0.01-\$3.34/hour	32	3.39
\$3.35-\$3.84/hour	410	43.43
\$3.85-\$4.34/hour	198	20.97
\$4.35-\$4.84/hour	118	12.50
\$4.85-\$5.34/hour	100	10.59
\$5.35-\$5.84/hour	40	4.24
\$5.85+/hour	46	4.87
*Number responding	944	

NON-COOPERATIVE-EDUCATION
PARTICIPATION

14.0504

n = 8

\$0.01-\$3.34/hour

\$3.35-\$3.84/hour

\$3.85-\$4.34/hour 3 60.00

\$4.35-\$4.84/hour

\$4.85-\$5.34/hour 1 20.00

\$5.35-\$5.84/hour 1 20.00

\$5.85+/hour

Number responding 5

14.0798

n = 42

\$0.01-\$3.34/hour 2 7.69

\$3.35-\$3.84/hour 11 42.31

\$3.85-\$4.34/hour 4 15.38

\$4.35-\$4.84/hour 5 19.23

\$4.85-\$5.34/hour 3 11.54

\$5.35-\$5.84/hour 1 3.85

\$5.85+/hour

Number responding 26

COOPERATIVE EDUCATION
PARTICIPATION

14.

n =

\$0.01-\$3.34/hour

\$3.35-\$3.84/hour

\$3.85-\$4.34/hour

\$4.35-\$4.84/hour

\$4.85-\$5.34/hour

\$5.35-\$5.84/hour

\$5.85+/hour

*Number responding

14.

n =

\$0.01-\$3.34/hour

\$3.35-\$3.84/hour

\$3.85-\$4.34/hour

\$4.35-\$4.84/hour

\$4.85-\$5.34/hour

\$5.35-\$5.84/hour

\$5.85+/hour

*Number responding

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