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A STUDY OF THE EXTENT TO WHICH COMPUTER APPLICATIONS SHOULD BE INTEGRATED INTO AN UNDERGRADUATE CURRICULUM IN FINANCE

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Wanda V. Smith

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# A STUDY OF THE EXTENT TO WHICH COMPUTER APPLICATIONS SHOULD BE INTEGRATED INTO AN UNDERGRADUATE CURRICULUM IN FINANCE

By

Wanda V. Smith

#### A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Educational Administration

#### ABSTRACT

#### A STUDY OF THE EXTENT TO WHICH COMPUTER APPLICATIONS SHOULD BE INTEGRATED INTO AN UNDERGRADUATE CURRICULUM IN FINANCE

By

#### Wanda V. Smith

The survey of the experiences and perceptions of 60 graduates of the undergraduate curriculum in finance offered at Ferris State University and 47 employers of finance professionals located in Michigan was conducted in fall 1988. The survey was conducted to determine (a) the adequacy of the academic preparation of finance graduates for their first professional positions in the finance field, (b) the extent to which finance professionals use computer applications in their positions, (c) the need for computer competency for career progress in the finance field, and (d) the expected use of computer applications in the finance in the future.

MANOVA, specifically Wilks' lambda, ANOVA, and t-tests were applied to the data. A split-group analysis, comparing the earlier graduates with the more recent graduates and both graduate groups with the employer group, was also performed, using MANOVA, ANOVA, and t-tests. At the .05 level of significance, significance was found in the examination of the four null hypotheses. Thus, each of the null hypotheses was rejected.

The employers thought the graduates to be less well prepared for their first professional position, especially in the area of computer competency, than did the graduates (p < .05). The finance professionals employed by the employer group used computer applications more frequently than did the graduates (p < .05). The employer group viewed the need for competency in computer applications to be more important for career progress than did the graduates (p < .05). The employer group expected computer applications to be used more frequently in the future than did the graduates (p < .05).

Recommendations include (a) further study to determine why the responses of the employer group and graduate group differed, (b) research to develop a more definitive identification of the specific kinds and extent of computer applications needed in programs that prepare graduates for the field of finance, and (c) replications of the study in the finance field and other similar vocationally oriented programs in the future. Copyright by WANDA V. SMITH 1989

Dedicated to the memory of

.

Lawrence S. and Wanda V. Johnson

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## CHAPTER I

## INTRODUCTION

Schools of business across the nation have been engaging in such activities as installing microcomputers for instructional use, requiring students to purchase microcomputers, restructuring courses to integrate microcomputer applications, and adding courses in hightechnology management (Turner, 1986). Nearly all of this activity has been in response to the effect that information technology has been having on the conduct of the nation's business. Yet little evidence exists of systematic attempts to study the influence and implications of computerization on the curriculum (Krause, 1985; Nash, 1986).

At the same time that many schools of business have been requiring some computer competency of their students, primarily in response to American Assembly of Collegiate Schools of Business (AACSB) accreditation requirements (Griswold, 1985), students' expectations have been changing as well. An increasing number of students have had considerable experience with computers when they enter college. Sandra G. Gustavon (1986), professor of insurance, legal studies, and real estate at the University of Georgia, commented on the expectations of these computer-wise students:

Such students are unlikely to be either challenged or satisfied with many of the educational techniques common today. For example, professors who assign projects or problems requiring repetitive calculations may soon find themselves under considerable pressure to provide computer assistance for completing the assignments. Likewise, faculty soon may be routinely expected to arrange computer-based instructional support to reinforce concepts discussed in the classroom. (p. 301)

Faculty members in the Management Department at Ferris State University, the focal institution for this study, had been experiencing such pressures.

The major microcomputer manufacturers drove the race to computer applications as well, engaging in deep discounting practices to capture the university market. Weiner (1987) explained the motivation of the manufacturers:

For computer makers, the race to win college customers is both prestigious and crucial. University commitments usually create long-term sales opportunities as campuses begin to standardize on a few vendors for the bulk of their purchases. And the students who buy computers are likely to become lifetime customers. (p. 53)

An administrator on one campus commented on the manufacturers' desire to capture the student market: "They work on a particular machine, get to know it and like it, and a couple of years after graduation they may be in positions to influence corporate decisions" (Weiner, 1987, p. 54).

Major universities, supported with grants from such private industry giants as International Business Machines (IBM), found themselves positioned to provide a number of opportunities for their students. George Turin ("Computerization," 1985), dean of the School of Engineering and Applied Science at the University of California-Los Angeles, one of the institutions named a recipient of a \$100 million grant from IBM's Advanced Education Program, explained how the curriculum would change as the result of increased computer capability:

Once the new system is in place, it will change both course structure and policies. One of the first things we will do, in fact, is to computerize some courses. We will bring the new system into play not only for homework operations, but as an integral part of the learning process. For instance, in electric circuits we will want to have students design circuits and see them perform as if they were doing actual tests in a laboratory. Or if a student is designing a bridge or an airfoil, it would be nice to let him or her do complex designs using the computer network with all of its capability. In airfoil design, for instance, a student could observe on the work station changes in airflow and streamlines as the airfoil outline is varied. (p. 67)

Clearly, Turin had conceptualized some of the applications possible with increased computer capabilities on the UCLA campus. The extent to which those prospective applications resulted from a systematic study of the influence and implications of computerization on the curriculum was not so clear, however.

Nor were faculty unmindful of the role of computers in academic instruction. For example, the results of one survey very clearly indicated that faculty understood the need for computer applications:

. . . Information technologies should . . . be used to emulate situations that occur in the world of work. [The faculty] stressed the importance of preparing students for conditions they will encounter when they graduate. For example, a student of manufacturing design should be exposed to computer-assisted design and manufacturing procedures just as a student of journalism should be exposed to word processing. (p. 10)

The vocational orientation and value of computer applications seemed not to be ignored by either faculty or academic administrators. Nevertheless, George W. Bonham (1983), executive director of the Council on Learning and founding editor of <u>Change</u> magazine, reflected on the lack of thoughtful integration of computers into the total educational process. He claimed that "few events could be more significant for learning than the successful integration of computers into the educational process" (p. 2). Yet despite all the activity associated with computers and education, Bonham found little concern being given to long-term educative and intellectual objectives, and little critical analysis of the educational importance of what was being done.

#### Statement of the Problem

The problem addressed in this study was the extent to which computer applications need to be incorporated into an undergraduate curriculum in finance, as perceived by employers of finance professionals and recent finance graduates. The assumption underlying the problem was that finance majors required competency in computer applications in order to be perceived by prospective employers as job ready and fit for career progress.

#### Purpose of the Study

The primary purpose of this study was to determine the extent to which computer applications should be incorporated into the curriculum of a specific undergraduate business program. With the determination made, the faculty associated with the program would have a basis for effecting change in the curriculum. As well,

academic administrators, whose responsibilities include providing resources, encouraging faculty training, and overseeing the curricular change process, would have a basis for allocating resources, providing for faculty training, and ensuring appropriate change in the curriculum.

In addition, public institutions of higher education, typically faced with limited resources, require cost-efficient means for identifying the need for curricular change in the vocational components of their degree programs. Therefore, a secondary purpose was to develop a survey methodology that might serve as a model for exploring the extent to which various business curricula are perceived as adequately preparing graduates for the early years of their professional careers.

In an attempt to accomplish the primary purpose of the study, graduates of the finance program at Ferris State University were surveyed, as were employers located in Michigan. The major features of a process recommended by Dillman (1978) were adopted in an effort to develop a cost-efficient survey methodology.

# Context of the Study

The job-preparedness of graduates of an undergraduate curriculum in finance of a public institution of higher education, Ferris State University, was examined for the purpose of identifying the need for introducing program-specific computer applications in the curriculum in a coherent manner. Further, the experiences and expectations of organizations that employ finance professionals were

examined. The study was focused only on the finance curriculum, in which computer applications were identified easily and employer needs could be identified specifically as well. The scope of the study did not extend to other curricula, nor were aspects of the curricula other than the courses included in the major program of the study addressed.

The individuals included in the study were graduates of the B.S.-Business (Finance) curriculum at Ferris State University during the academic years 1983-84 through 1987-88. The curriculum that was the focus of the study was only one of a full range of technical, vocational, and professional programs offered by the university. Ferris State University is located in Big Rapids, Michigan.

The organizations included in the study were a random selection of businesses operating within Michigan that had assets in excess of \$500,000 and were included in Dun & Bradstreet's <u>1988 Million Dollar</u> <u>Directory</u>. The businesses represented a wide range of private profit-making organizations operating within the boundaries of the state.

#### Need for the Study

For academic programs that have a strong vocational component, there is an ongoing need to ensure that the program content fits the demand of the job market for which graduates of those programs are being prepared. Especially where evidence exists of rapid change in the content of jobs, such as with the exponential increase in computer applications in business, colleges and universities require an effective and efficient mechanism to measure the extent of the fit between the curriculum and the present and future requirements of the job market. When curriculum change occurs as the result of such studies, future graduates and the employers of the graduates benefit from the change. By extension, society also benefits from the improved productivity resulting from more adequately trained workers.

Although this study was focused on an identification of computer applications in a specific professional area, the research also could provide a model for other vocationally oriented programs to address more methodically, rationally, effectively, and efficiently the curricular change process suggested by the results of the study.

#### <u>Hypotheses</u>

The relatively recent use of program-specific computer applications in business curricula, coupled with increasing computer applications by the nation's businesses, suggested that schools of business were not adequately preparing job-ready graduates. To examine the need for integrating computer applications into a specific business curriculum, four hypotheses were developed. Stated in the null form, the hypotheses are as follows:

<u>Hypothesis</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for the first professional position in the finance field.

<u>Hypothesis 2</u>: There is no difference in the extent to which finance professionals employed by selected employers located in Michigan and graduates of an undergraduate degree program in finance use computer applications in their present positions.

<u>Hypothesis 3</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for career progress in the finance field.

<u>Hypothesis 4</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the use of computer applications in the field of finance during the next five years.

The questions were investigated using instruments that explored the experiences and perceptions of the employer group and the graduate group. Limited demographic information was collected as well. Survey responses were examined at the .05 level of significance using t-tests, analysis of variance (ANOVA), and multivariate analysis of variance (MANOVA).

## Definition of Terms

The following terms are used throughout the dissertation and are defined to ensure clarity and continuity for the reader.

<u>Computer applications</u>: the use of word-processing, spreadsheet, or data-base programs to perform a specific function or to solve a specific problem.

<u>Data base</u>: a nonredundant collection of data stored in one or more computer files.

<u>Information technology</u>: includes the use of all types of computers--mainframes, minicomputers, and microcomputers--and

extends to related technology such as telecommunications and teleconferencing.

<u>Spreadsheet</u>: a software package that accepts data in the form of columns and rows and facilitates their manipulation and presentation.

<u>Word processing</u>: use of the computer to create, edit, store, and print documents.

# Limitations and Delimitations

#### <u>Limitations</u>

The major limitations of the study included the following: the reliance on self-reported data from the survey participants, who were graduates of a finance curriculum and randomly selected employers; the representativeness of the respondents to the survey of the employers; the response rate of both the graduates and the employers; and the extent to which the survey instrument adequately addressed the areas of concern in the practice of finance.

#### **Delimitations**

The survey sample of finance graduates was limited to graduates of the finance curriculum in a school of business of one public, four-year university in Michigan. The group cannot be assumed to be representative of all graduates of all finance curricula in all schools of business, either within Michigan or across the nation. Nor can the finance curriculum be assumed to be representative of all programs offered by schools of business. Furthermore, the respondents to the survey of employers cannot be assumed to be representative of all employers who hire graduates of finance curricula.

# Organization of the Study

The dissertation includes five chapters. Chapter I contained an introduction to the study, a statement of the problem, the context of the study, the purposes of the study, the need for the study, the hypotheses, a definition of terms, and an identification of the limitations and delimitations.

Chapter II contains a review of the literature that illustrates the extent to which computer applications are used in the area of finance and describes the efforts of schools of businesses or other vocationally oriented institutions to identify the extent to which computer applications should be integrated into the curriculum.

Chapter III contains a description of the design of the study. The population surveyed, the instruments employed, and the method of analysis used in the study are explained.

In Chapter IV, the findings of the study are discussed and illustrated. ANOVA, MANOVA, and t-tests were used to test for significance at the .05 level.

The summary, conclusions, recommendations, and reflections of the study are presented in Chapter V.

#### CHAPTER II

# **REVIEW OF THE LITERATURE**

The purpose of this study was to determine the extent to which computer applications should be incorporated into an undergraduate curriculum in finance, as perceived by employers of finance professionals and recent finance graduates. The purpose was accomplished by examining the experiences and expectations of both graduates of such programs and employers of graduates of such programs. The object was to reach a conclusion about the need for integrating computer applications into the curriculum, based on expressed needs of the graduates and the employers. Therefore, a search of the literature was conducted to identify the use of computer applications in the field of finance. Then, a search of the literature was undertaken to discover studies that dealt with integrating computer applications into vocationally oriented programs in higher education. An ERIC search was conducted in the library at Ferris State University. A search of the <u>University of</u> Michigan (UMI) Dissertation Abstracts data base was conducted, as was a search of the <u>Business Periodicals Index</u> data base.

# Computer Applications in the Field of Finance

A number of articles were reviewed that illustrated the use of computer applications in the field of finance. For example, Tyson (1988) reported that firms that manufacture and market computer systems have been aggressively pushing sophisticated new computer systems. One such firm, Sun Microsystems, headquartered in California, has been targeting banks and insurance companies for sales of the firm's new computer workstations. Gary Little, the acting marketing manager for the firm, was quoted as saying: "The target areas are portfolio management, actuarial analysis, documentimaging systems, and executive information workstations" (Tyson, 1988, p. 8). Other firms in the highly competitive industry have been concentrating on financial services as well.

Tim McManus (1988), director of marketing for Lotus Development Corporation, discussed the extent to which the work of financial analysts has been computerized: "Personal computers have automated virtually every aspect of financial analysis, including the process of collecting the critical financial information that is the basis for the analyst's work" (p. 50). McManus then identified even more sophisticated and efficient options for data collection. With the traditional options, he explained, tapping mainframe resources and rekeying the data into applications for analysis or using online data bases, the analysts were spending 80% of their time collecting data and only 20% of their time interpreting the data for the benefit of their clients. McManus identified a new information source, a Lotus product called CD-Rom (compact disk read-only

memory). The new application, he contended, is an excellent medium for transferring vast amounts of data directly to a desktop personal computer. More important, unlike the traditional systems, the new product offers business solutions rather than just data sources. McManus was confident that new computer technology would improve the productivity of the financial analysts.

Both the present and the future of information technology in the world of institutional trading were addressed by Reed Jarrell (1988), vice-president of marketing for Financial Trading Systems. Jarrell commented on the changes in and expansion of investment vehicles available to institutional traders:

In order to handle this unrelenting expansion, banks and brokerage houses have already invested billions in information technology and this trend is expected to escalate. Recent research reveals trading systems and new back-office systems integration are now the highest priority for financial firms. (p. 52)

Jarrell then explained that integrated trading systems were not available until the mid-1980s. Even newer developments, such as fully integrated real-time systems that synchronize front-office trading with back-office operations, cost only a fraction of the older internally built systems and permit banks and brokerage houses below the top tier to become more active participants in institutional trading. Jarrell predicted an increasing installation of the fully integrated trading systems.

Financial planners, who most often work alone or in partnership with only a few others, use computer technology for information processing and dissemination (Johnson, 1988). Word processing has been reported to be the most widely used computer application. Word processing is used to create and edit documents, to add to or merge other documents, and to reformat documents for printing of client reports, newsletters, or brochures. For their financial and tax planning services, financial planners use integrated systems that incorporate such features as word processing, financial and tax analysis programs, graphics programs, and client or portfolio tracking and management programs. The computerized applications permit the financial planners both to expand their businesses and to better meet the needs of their clients.

Newest to the field of finance is a recently emerged computer technology called expert systems. Valentine (1988) explained that expert systems evolved from the more traditional computer applications. What is new is the development of a knowledge base, a set of decision rules that the computer system must obey, as opposed to a data base that is present in virtually every computer application in finance. The expert system applies the knowledge base to the data base to accomplish the task for which the system was designed. Valentine elaborated:

Using an expert system is similar to using an ideal subordinate who inevitably follows all the rules provided by the professional, who never overlooks any legitimate alternatives and who can explain every action or decision that was undertaken. All the professional need do is specify the rules he wants this able subordinate to follow. (p. 51)

Valentine addressed the use of expert systems in investment tasks such as restructuring a portfolio's asset allocation, determining the specific source of a portfolio's superior or poor

performance, isolating potential takeover candidates, and evaluating trading activity. He envisioned a new relationship between the investment professional and the computer in the future:

In the hypothetical world of the not-too-distant future, the computer may run expert systems that contain the professional's current best thinking about some problem, and the professional may define the rules for the next problem, or refine the rules already in place for the old problems. The expert systems <u>solve</u> the problems; the professionals <u>define</u> both the problems and the methods by which they are to be solved. (p. 53)

A number of college professors who specialize in computerized financial applications have agreed with Valentine that expert systems represent the next front of computer applications.

On the current use of expert systems in financial management, Holsapple, Tam, and Whinston (1988) reported that:

In recent years, expert systems have become an important arena in the research and development plans of financial firms. Although exact statistics are unavailable, indications are that there is considerable investment in expert systems technology. Worldwide deregulation of the finance industry has pushed firms to rely more on computer-based technology in order to stay on the competitive edge. A recent study reported that seven banks in the U.S. have invested more than \$200 million in computer technology each year, with Citibank topping the group by an investment of \$850 million. (p. 13)

Holsapple et al. then identified specific applications in the area of finance. Among the applications was American Express's use of an expert system for credit analysis. The expert system evaluates unusual credit requests from cardholders on a real-time basis. With their old system, the company experienced a 15% badguess rate; that is, the company approved requests that turned out to be poor credit risks. With the use of the expert system, the bad-guess rate was reduced to 4%. In the area of securities trading, London-based Midland Bank uses an expert system to manage its currency options and interestrate-exchange portfolios. The expert system is also used to price options and to provide monitoring systems. Morgan Stanley, a leading United States securities trader, announced an additional \$1 million in profit on its arbitrage activities after the installation of an expert system (Holsapple et al., 1988).

Applications of expert systems in other areas have been reported as well. Stewart C. Myers (1988) at Massachusetts Institute of Technology was part of a group that developed an expert system for corporate investment decision making. The system functions in three important areas of capital budgeting: problem set-up and forecasting, interpretation of results, and what-if (alternative modeling) analysis. Expert systems are being used for credit management (Srinivasan & Yim, 1988), the evaluation of business loans (Shaw & Gentry, 1988), the analysis of commercial loans (Duchessi, Shawky, & Seagle, 1988), and the examination of the bankruptcies of savings and loan institutions (Elmer & Borowski, 1988).

The senior operations officers of 344 financial institutions participated in a 1987 survey conducted by the <u>American Banker</u> (Feuerstein, 1988). One set of questions in the survey was designed to identify the officers' perceptions of how computer technology would be used in the next five years. Forty-seven percent of the officers expected desktop publishing to be used. An equal

percentage expected automated voice-response devices and 24-hour global securities trading and funds transfer to be used. Thirty-six percent of the group expected to be using expert systems for loan approvals. A nearly equal percentage expected to have available check truncation, "smart" cards, and video kiosks. Twelve percent expected home banking to be fully available. Clearly, this group of bank officers visualized an increasing application of computer technology in their industry in the future.

## Integrating Computer Applications Into Vocationally Oriented Programs in Higher Education

Few articles or studies were discovered that related directly to integrating computer applications into vocationally oriented programs in higher education. Abundant literature existed that discussed computer literacy, computer-aided instruction, and computers and the curriculum. However, most published articles, reports, and studies focused on the plans and use of educators or institutions in primary or secondary education. Where reports were published that related to higher education, the specifics of integrating computers into the curriculum were missing or the forces that led to increasing uses of computers in the curriculum were not discussed.

Tucker (1984) attempted to explain the dearth of publications about the developments in the use of computers in higher education, the benefits of such use, plans being made to translate computerrelated investments into better instruction, or the ways in which information technology was changing the lives of students and staff in higher education. He explained:

The reason for the silence is simple. Campus leaders most directly involved are much too busy making policy, designing systems, and managing implementation to write reflective articles for scholarly journals describing the fast moving events in which they are key participants. (p. 2)

Tucker contended that as a result of the silence, those faced with making decisions about the use of computer technology on one campus knew little about what other campuses were doing, why they were doing it, what they expected to gain, or how problems were solved.

Nevertheless, several reports and studies have been published that have addressed the need for the integration of computer applications into vocationally oriented programs in postsecondary education.

#### <u>Reports</u>

At least one system of postsecondary education has been taking a systematic approach to incorporating computers into the curriculum. The computing activity in the Vancouver (Canada) Community College System was in direct response to the needs of the labor market ("Report of the Instructional Computing Committee," 1984). The Vancouver Community College System developed a process that included ongoing assessments to identify competencies needed by the work force within the system's instructional mandate. The process also brought together major employers to identify occupational areas undergoing rapid change. These activities permitted an identification of areas in which training curricula needed to be developed. Such systemwide approaches appeared rare, however.

Gustavon (1985) conducted a survey to determine the extent to which computers were being used by insurance educators in the United States at the college and university level. Ninety schools were included in the study. Of the 73 respondents, only 17 (23.9%) reported any computer applications by the students in any of the insurance courses taught during the 12 months preceding the survey. Only six schools had incorporated microcomputer applications into their curriculum.

Gustavon also sought opinions about the use of computer applications in the insurance curriculum in the future. She found two significant reasons for the expansion of the use of computer applications: the expectations of the insurance industry and the increasing capabilities of computers. Gustavon used the results of the survey to support a general argument that insurance educators increase their efforts to integrate the use of computer applications into their courses.

# Research Studies

In one of three studies directly related to computer applications in vocationally oriented business programs in higher education, Forde (1987) surveyed 595 personnel directors located in Alabama, Arkansas, Louisiana, and Mississippi. The personnel directors worked in such organizations as banks, hospitals, legal firms, and manufacturing firms. A preliminary survey was conducted to determine whether the organizations employed graduates of fouryear programs in office administration, the focal program of the study. Of the 396 (66.6%) personnel directors who responded to the initial inquiry, 74 (18.6%) replied that they employed graduates of four-year programs in office administration. A second questionnaire, composed of items examining 76 competencies associated with office administration responsibilities, was sent to the group of respondents to the initial inquiry who employed graduates of office administration programs. Sixty-four (86.5%) of the personnel directors responded to the second questionnaire.

One of the general findings of the Forde study was that automated office skills were rated low in importance, compared with other competencies expected of graduates of four-year programs in office administration. Forde concluded that contemporary offices might not have been as automated as much of the literature seemed to indicate. Nevertheless, Forde concluded that there was little research to indicate that the business curriculum was being revised to adapt to the technological advances implemented in office settings.

In a project similar to the Forde survey, Bujea (1985) studied the need for computer applications in the accounting curriculum in two-year postsecondary educational programs located in Canada's prairie provinces: Alberta, Manitoba, and Saskatchewan. The population for the survey included 26 instructors, 44 graduates, and 115 employers. The response rate for each group was 92.5% (24) for the instructors, 52.3% (23) for the graduates, and 58.3% (67) for
the employers. The findings of the study were descriptively reported. Cross-tabulations were performed to determine significance at the .05 level. The chi-square statistical test was performed when the dependent variable was nominal. The Kruskal-Wallis test was performed when the dependent variable was ordinal. Frequencies were reported for the responses to all of the objective questions incorporated into the survey instrument.

Among the employers responding in the study, 30.5% reported that graduates of two-year accounting programs should be better prepared in computer-programming skills, 41.4% preferred that graduates be better prepared in the use of accounting software, and 64.6% required extensive to moderate knowledge of computerized accounting processes in entry-level positions.

Among the graduate respondents, 21.7% perceived a need for an extensive to moderate knowledge of computerized accounting processes in entry-level positions. On several items directed toward specific accounting processes, however, the graduates' perceived need was higher. Among the group, 51.2% perceived a need for knowledge of computerized inventory processes and 47.7% perceived a need for knowledge of computerized payroll accounting processes.

In contrast to the employer and graduate groups, 61.3% of the instructors reported that knowledge of computerized accounting processes was not required, whereas 58.1% reported that knowledge of computerized payroll accounting processes was not required.

In general, Bujea found that employers tended to place a greater emphasis on skills than did graduates and instructors. Bujea also found that graduates tended to place greater importance on skills than did instructors.

In another study that focused on the computer competencies needed by postsecondary vocational-technical school business education students, Adams (1985) surveyed 214 teachers and 108 personnel managers located in Georgia. Twenty-nine personnel managers (26.9%) participated in the study. An additional 33 (30.6%) responded to the survey but did not complete the questionnaire because their organizations taught in-house all the computer competencies required of their employees. Among the teacher group, 113 (52.8%) responded to the survey. The 230-item instrument designed to identify specific computer competencies was divided into four versions for the teachers and three versions for the personnel directors in an effort to prevent patterned responses.

The data collected in the study were analyzed by computing chisquare values, area weighted means, and ranking of area weighted means. Among 180 competencies identified in the survey, the study results indicated that a high degree of congruence existed between the teachers and the personnel managers in their perceptions of the importance of the competencies.

#### Summary

A number of articles in professional journals were found that illustrated the use of computer applications in the field of finance. As well, several articles incorporated predictions of even more sophisticated applications with evolving technology, especially the application of expert systems.

Few studies were found that dealt with the basis for making decisions about integrating computer applications into the curriculum of vocationally oriented business programs in postsecondary education. Where specifics of the process were reported, however, some means for assessing the needs of the labor market were incorporated into the process. Only one study included an examination of the perceptions of graduates of vocationally oriented business programs.

Thus, the need for the study was reinforced both by the evidence of the use of computer applications in the field of finance and by the dearth of publications that dealt with integrating computer applications in vocationally oriented programs in higher education.

#### CHAPTER III

## METHODOLOGY

The primary purpose of this study was to determine the extent to which computer applications should be incorporated into the finance curriculum at Ferris State University, as perceived by employers of finance professionals and recent finance graduates. Thus, the design of the study included a survey of both recent graduates and selected employers; both groups possess information crucial to the process of making decisions about curricular change. A peripheral purpose was to test a survey methodology that could prove to be an effective and efficient model for exploring the extent to which various business curricula adequately prepare graduates for the early years of their business careers.

### Population of the Study

To determine the experiences and perceptions of graduates of an undergraduate finance program, the population for the survey of graduates included all living graduates of the B.S.-Business (Finance) curriculum offered at Ferris State University during the academic years 1983-84 through 1987-88 whose current residence was in the United States. The names of the graduates and their year of graduation were provided by the Office of the Dean, School of

Business, at Ferris State University. The most recent addresses on file for these graduates were provided by the Office of Budget, Alumni, and Development at Ferris State University. The currency of the addresses was verified against a computerized data file of alumni available at the university.

The population for the survey of employers was a sample of a group of employers located in Michigan whose size of operations was large enough to warrant inclusion in the 1988 <u>Million Dollar</u> <u>Directory</u> published by Dun's Marketing Services, Inc., a division of the Dun & Bradstreet Corporation. The group included such diverse employers as manufacturers, wholesalers, retailers, and financial organizations. The businesses had assets in excess of \$500,000, the threshold level for inclusion in the <u>Million Dollar Directory</u>. The directory included 6,781 employers located in Michigan.

### Sampling Procedures

The survey of graduates of the B.S.-Business (Finance) curriculum during the academic years 1983-84 through 1987-88 included 102 persons. The distribution of the graduates in the population follows:

<u>Year of Graduation</u>	<u>Number of Graduates</u>
1983-84	14
1984-85	16
1985-86	23
1986-87	24
1987-88	25

No sample was drawn from the population. Instead, the population was surveyed in its entirety.

The population of employers located in Michigan and listed in the 1988 <u>Million Dollar Directory</u> was 6,781. An initial inquiry was sent to 680 employers, a 10% sample randomly selected from 6,781 Michigan employers, using a computer-generated list of random numbers. The initial inquiry was intended to determine whether the organizations employed graduates of four-year programs in finance and, if they did, whether they were interested in participating in the survey. The final sample included only those employers indicating that they employed finance graduates and were interested in participating in the survey. Forde (1987) used a comparable process in a survey of personnel directors located in the mid-South.

#### The Survey Instruments

#### <u>Graduate Group</u>

The survey instrument, developed specifically for the study, was organized to address the four hypotheses of the study. The inquiry was directed toward the graduates' perceptions of (a) their preparation for their first professional position, (b) the extent to which they then were using computer applications, (c) the need for computer competency for career progress, and (d) the use of computer applications in the field of finance during the next five years. Limited demographic information was collected as well. A reproduction of the survey instrument can be found in Appendix A.

<u>Hypothesis 1</u>. Two questions were directed toward the graduates' perceptions of their preparation for their first professional position. The first question was designed to elicit a qualitative assessment of the adequacy of the degree program, using a five-point Likert-type scale with responses ranging from "very well prepared" to "poorly prepared." The second three-part question was directed toward the importance of competency in the use of word processing, spreadsheets, and data bases in the first professional position, using a five-point Likert-type scale with response alternatives ranging from "very important" to "unimportant."

<u>Hypothesis 2</u>. Three questions were developed to determine the extent to which the graduates were using computer applications in their work. The questions were directed toward the graduates' use of word processing, spreadsheets, and data bases. A five-point Likert-type scale provided response alternatives ranging from "very frequently" to "never."

<u>Hypothesis 3</u>. Three questions were developed to determine the graduates' need for computer competency for career progress. The first, using a yes-no categorical response, was designed to determine whether the graduates' career progress would be affected if they were not competent in computer applications. The second three-part question was directed toward the importance of competency in the use of word processing, spreadsheets, and data bases for career progress, using a five-point Likert-type scale with response alternatives ranging from "very important" to "unimportant." The third question, using a yes-no categorical response, was designed to determine whether training in computer applications was required by the employers of the graduates.

<u>Hypothesis 4</u>. One three-part question was developed to determine the graduates' expectations about the use of computer applications in the field of finance during the five years following the survey. A five-point Likert-type scale question provided for response alternatives ranging from "very frequently" to "never."

<u>Demographic information</u>. Several questions were included in the instrument to collect limited demographic information about the graduates. The graduates were asked two questions about the characteristics of their present employers: the type of business and the approximate number of employees. The responses were entered in blanks following the questions. The year of graduation from the program was collected, the graduates circling one of the five academic years of graduation included in the survey, 1983-84 through 1987-88. A list of courses in the major was included, the graduates circling one of three responses to indicate whether they had computer applications in the courses. The alternatives were "yes," "no," and "did not take."

The next series of questions was developed to determine whether the graduates were or had ever been employed in the area of finance and how much time had passed from graduation to securing a position related to their major. If they were not or had never been employed in the area of finance, the graduates were asked to provide the reason. A series of yes-no and fill-in-the-blank responses was developed to collect the information about the graduates' employment experiences.

<u>Voluntary comments</u>. The graduates were provided an opportunity to make comments about the professional training they had received at Ferris State University. They were asked whether there was anything else they wanted to say about their training at Ferris. The back of the booklet-form instrument provided the space for response.

<u>Request for summary of results</u>. The respondents were provided an opportunity to request a summary of the results of the survey. To maintain the confidentiality of the respondents, they were asked to indicate their interest in a summary by printing their names and addresses on the back of the return envelope, not on the questionnaire itself. A copy of the preliminary report can be found in Appendix B.

#### Employer Group

The initial inquiry to the employer group was designed to determine whether the organizations employed graduates of four-year programs in finance and, if they did, whether they were interested in participating in the more fully developed survey. A copy of the initial inquiry can be found in Appendix C.

The survey instrument developed for the employer group who responded to the initial inquiry paralleled that developed for the graduate group except that no questions were directed toward the academic and professional lives of the respondents. A reproduction of the instrument can be found in Appendix D. The instrument was designed to provide descriptive data about the employers' experiences with and expectations of professionals who were employed in the area of finance.

<u>Hypothesis 1</u>. Two questions were directed toward the employers' perceptions of the preparation of employees with undergraduate degrees in finance for their first entry-level position. The first question was designed to establish an overall, qualitative assessment of the adequacy of the graduates' academic preparation, using a five-point Likert-type scale with responses ranging from "very well prepared" to "poorly prepared." The second three-part question was directed toward the importance of the graduates being competent in the use of word processing, spreadsheets, and data bases in their entry-level positions. A five-point Likert-type scale provided response alternatives ranging from "very important" to "unimportant."

<u>Hypothesis 2</u>. Three questions were designed to establish the extent to which finance professionals employed by the employers used computer applications in their work. The questions were directed toward the finance professionals' use of word processing, spreadsheets, and data bases. A five-point Likert-type scale provided response alternatives ranging from "very frequently" to "never."

<u>Hypothesis 3</u>. Three questions were developed to determine the employers' expectations about computer competency for career progress in the area of finance. The first, using a yes-no categorical response, was designed to determine whether the career progress of finance professionals would be affected if they were not

competent in computer applications. The second three-part question was directed toward the importance of competency in the use of word processing, spreadsheets, and data bases for career progress and used a five-point Likert-type scale with responses ranging from "very important" to "unimportant." The third question, using a yesno categorical response, was designed to determine whether the employers required training in computer applications for professionals in the area of finance.

<u>Hypothesis 4</u>. One three-part question was developed to determine the employers' expectations about the use of computer applications in the area of finance during the five years following the survey. A five-point Likert-scale question provided response alternatives ranging from "very frequently" to "never."

<u>Demographic information</u>. Four questions were included in the instrument to collect demographic information about the employers. One question was directed toward the major area of business operations. The employers circled l of the ll general categories of business from a list established by the Standard Industrial Classification Code. The employers were asked to identify the total number of employees in their organization, the number of professionals employed in the area of finance, and the number of professionals in the area of finance they expected to employ five years from the date of the survey. The responses were entered in blanks following each of the three questions.

<u>Voluntary comments</u>. The employers were provided an opportunity to make additional comments about their employees who were graduates of undergraduate programs in finance. The back of the booklet-form instrument provided the space for the response.

<u>Request for summary of results</u>. The respondents were provided an opportunity to request a summary of the results of the survey. To maintain confidentiality of the respondents, they were asked to indicate their interest in a summary by printing their names and addresses on the back of the return envelope, not on the questionnaire itself.

#### Endorsement

In an attempt to obtain the maximum response rate from both the graduates and the employers, endorsement for the study from Ferris State University was obtained. Permission also was obtained to use letterhead stationery and envelopes. A copy of the endorsement letter can be found in Appendix E. The university provided further support by permitting use of the copy center and library facilities and access to the mainframe computer for statistical analysis.

#### <u>Pilot Test</u>

#### <u>Graduate Group</u>

The survey instrument for the graduates was pilot tested with seven individuals who graduated from the B.S.-Business (Finance) program at Ferris State University in the academic year 1982-83. The graduates were contacted by telephone to ascertain their interest in participating in the pilot study. The draft survey instrument was then mailed to the graduates. They were asked to complete the questionnaire and return it with their comments about any problems encountered in the completion of the questionnaire or associated with the clarity of the questions. They were asked for their suggestions about the addition or elimination of items and for format changes. The graduates made no recommendations for change in the questions or format. Those who provided comments suggested that the instrument was appropriate for the purpose.

## Employer Group

The survey instrument for the employers was distributed for pilot testing to five employers randomly selected from the Dun & Bradstreet list from which the survey sample was taken. Fourteen organizations were contacted initially by telephone for their interest in participating in the pilot study; only 5 of the 14 met the criteria for participation. The survey instrument was then mailed to the five employers. The contact persons, owners or general managers, were asked to complete the questionnaire and return it with their comments about any problems encountered in the completion of the questionnaire or associated with the clarity of the questions. They were asked for their suggestions about the addition or elimination of items and for format changes. Only two of the five employers returned the draft questionnaire. Neither made recommendations for change in the questions or format.

# Data Collection

Mail surveys of the two populations, graduates and employers, were conducted. The process used for the conduct of the mail surveys was, with one exception, a process used by Dillman (1978) at Washington State University and known as the Total Design Method (TDM). The survey methodology deviated from the Dillman process in that a third follow-up mailing used regular first-class mail rather than the recommended certified mail.

The survey plan included the use of a log designed to track the activity associated with each participant. The log was adopted from a format outlined in <u>Questionnaires: Design and Use</u> (Berdie, 1986). The log provided for the name of each participant, the code number assigned to the participant and entered on the instrument mailed to that participant, and space for the identification of each contact activity and the date on which the activity occurred. A reproduction of the logs for both the employer and graduate groups can be found in Appendix F.

# <u>Survey of Graduates</u>

The first contact with the graduates was accomplished through an introductory letter mailed on October 10, 1988, to the most recent addresses on file with the Office of Budget, Alumni, and Development at Ferris State University and updated via the computerized alumni file. The introductory letter was designed to explain the purpose of the survey and to inform the graduates that the instrument was being mailed the following week. A copy of the

introductory letter can be found in Appendix G. The introductory letter was printed by the Ferris State University Copy Center on letterhead stationery used by the Management Department in the School of Business at the university. Use of official letterhead and envelopes was intended to convey the professional aspect of the survey. The names and addresses of the graduates were individually typed on both the letter and the envelope, using an IBM-XT computer and NEC 3550 printer on which the letter was prepared for copycenter reproduction. Each letter was individually signed with a fountain pen. These last two steps were intended to convey an element of personal attention given to each participant. Firstclass stamps were affixed to the envelopes.

When introductory letters were returned because of inaccurate addresses, telephone calls to the homes of the parents were attempted in an effort to obtain more current addresses for the graduates. The names of the parents, their addresses, and their telephone numbers at the time of the graduates' last attendance at the university were on file at the Office of the Registrar at Ferris State University. Where such contacts were successful, the survey materials were mailed to the updated address.

On October 17, 1988, one week after the mailing of the introductory letters, a cover letter detailing the procedures for participation in the survey and a copy of the coded survey instrument were mailed to each graduate. A copy of the cover letters can be found in Appendix H. The cover letter was printed by the university copy center on letterhead stationery used by the Management

Department in the School of Business at the University. The names and addresses of the graduates were individually typed on the letters and the envelopes. Each letter was individually signed, using a fountain pen. First-class stamps were affixed to the envelopes. A business reply envelope for the return of the instrument was enclosed.

One week after the mailing of the instruments, on October 24, 1988, a postcard reminder was sent to the graduates. Dillman (1978) reported that most people who answer questionnaires do so almost immediately after they receive them. The postcard reminder was used merely as a reminder and not to overcome resistance, timed to make an appeal that conveyed a sense of importance just after the original mailing had produced its major effect. The postcard served as a thank-you to those who had responded and a friendly reminder to those who had not. The names, addresses, and message were individually typed on each postcard using an IBM-XT computer and NEC 3550 printer. The postcards were individually signed. A copy of the postcard reminder can be found in Appendix I.

Three weeks after the mailing of the postcard reminder, on November 14, 1988, a follow-up letter, a second copy of the questionnaire, and a business reply envelope were mailed to nonrespondents. A copy of the follow-up letter can be found in Appendix J. The final follow-up letter was printed by the university copy center on letterhead stationery used by the Management Department in the School of Business at Ferris State University. The names and

addresses of the nonrespondents were individually typed on the letters and envelopes, using an IBM-XT computer and NEC 3550 printer on which the letters were prepared for copy-center reproduction. The letters were individually signed. First-class stamps were affixed to the envelopes.

## <u>Survey of Employers</u>

Concurrent with the mailing of the introductory letters to the graduates on October 11, 1988, the initial inquiry letters were mailed to the 680 employers randomly selected from the Million Dollar Directory. A copy of the initial inquiry letter can be found in Appendix C. The initial inquiry letter was printed by the university copy center on letterhead stationery used by the Management Department in the School of Business at Ferris State University. Use of official letterhead and envelopes was intended to convey the professional aspect of the survey. The names and addresses of the employers were individually typed on both the letter and the envelopes, using an IBM-XT computer and NEC 3550 printer on which the body of the letter was prepared for copy-center reproduction. This last step was intended to convey an element of personal attention given to each employer. Because of the volume associated with the initial inquiry to the employers, a signature stamp was used for the letters. First-class stamps were affixed to the addressed envelopes. Business reply envelopes were enclosed for the return of the initial inquiry.

On November 1, 1988, three weeks after the mailing of the initial inquiry letters, a cover letter detailing the procedures for participation in the survey and a copy of the coded survey instrument were mailed to the employers who responded that they employed graduates of four-year programs in finance and were willing to participate in the survey. A copy of the cover letters can be found in Appendix K. Letterhead stationery was used, and the names and addresses of the employers were individually typed on the letters and the envelopes, using the IBM-XT computer and NEC 3550 printer on which the body of the letter was prepared for copy-center reproduction. The letters were individually signed. First-class stamps were affixed to the envelopes. A business reply envelope was enclosed for the return of the instrument.

One week after the mailing of the instruments, on November 9, 1988, a postcard reminder was sent to the employers. The postcard served as a thank-you to those who had responded and a friendly reminder to those who had not, as a means for encouraging a high response rate. A copy of the postcard reminder can be found in Appendix L. The names, addresses, and message were individually typed on each postcard using an IBM-XT computer and NEC 3550 printer. The postcards were individually signed.

Three weeks after the mailing of the postcard reminder, a follow-up letter, a second copy of the questionnaire, and a business reply envelope were mailed to nonrespondents. A copy of the followup letter can be found in Appendix M. The final follow-up letter was printed on letterhead stationery used by the Management Department in the School of Business at Ferris State University. The names, addresses, and body of the letter were individually typed on the letters and envelopes using an IBM-XT computer and NEC 3550 printer. The letters were individually signed. First-class stamps were affixed to the envelopes.

### Design Elements

The formatting of the instrument and the questions followed the system recommended by Dillman (1978). The 5-1/2" x 8-1/2" bookletform instrument had an informative front cover along with a simple graphic design related to the practice of finance. The back cover provided an opportunity for the respondents to add narrative comments. Inside the booklet-form survey instrument, the choices of responses to each question were printed in capital letters to emphasize their importance. Instructions for responding to each question followed the question. All of the design elements were intended to create an attractive package for each mailing and to make response as easy as possible for the respondents.

Particular attention was paid to the style and appearance of all correspondence sent to the intended survey respondents. Every effort was made to create a professional image in order to elicit maximum response. The letterhead stationery and envelopes used were those used for all official, external correspondence of Ferris State University, 24-pound paper in a subtle gray with the university name printed in maroon and the name of the originating department printed in black. The survey instruments were printed on a lighter-weight

gray paper with all printing and the graphic illustration on the front cover in black. The original intention was for the instrument and an accompanying instruction sheet to be printed on the same grade paper as the letterhead stationery and envelopes. The combined weight of the mailing package, however, exceeded the weight allowable for regular first-class correspondence. The instruction sheet was omitted and the survey instrument altered and printed on lighter-weight paper to accommodate constraints imposed by the postage requirements. Dillman (1978) cautioned investigators not to neglect this aspect of the survey, especially when mailing costs must be kept within a predetermined budget.

## Coding and Data Entry

As each survey instrument was returned, the date of receipt was entered on the master survey log. The return envelopes were separated for those respondents who indicated that they would like a summary of the results, and their requests were entered on the log. Each instrument was reviewed to determine whether any respondent had raised a question that merited an immediate response.

The instruments were prepared for data entry, and the responses to the quantitative items were entered into a data file on the mainframe computer at Ferris State University. The results of the data-entry process were checked carefully for accuracy.

## Data Analysis

<u>Hypothesis 1</u>

The first hypothesis of the study required determining the perceptions of the employers about the need for competency in computer applications in the first professional position for graduates of four-year undergraduate programs in finance, determining the perceptions of graduates of a four-year undergraduate program in finance about the need for competency in computer applications in the first professional position, and comparing the perceptions of the two groups.

Parallel questions were posed to the employers and the graduates. Four Likert-type questions queried the respondents about the adequacy of the graduates' academic training and about the importance of competency in word processing, spreadsheets, and data bases in the first professional position.

The data were analyzed using the Statistical Package for the Social Sciences (SPSS-X) on the IBM 3083 JX3 mainframe computer at Ferris State University. MANOVA was used for the examination of the data related to Hypothesis 1.

MANOVA explores simultaneously the relationship between several independent variables and two or more dependent variables. Use of ANOVA in such situations could seriously inflate Type I error rates and ignore the possibility that some composite of the variable may provide the strongest evidence of reliable group differences (Summers, 1985).

Wilks' lambda was selected as the statistic for testing the null hypothesis. In the case in which there is one independent variable and more than one dependent variable, Wilks' lambda is one of several statistics that may be used (Tabachnick & Fidell, 1983).

## <u>Hypothesis 2</u>

The second hypothesis required determining the extent to which finance professionals employed by the employer group then used computer applications, determining the extent to which the graduates then used computer applications in their positions, and comparing the usage of the two groups. A series of three parallel Likert-type questions was used to ask the respondents about their current use of computer applications. MANOVA was used for the examination of the data related to Hypothesis 2.

# <u>Hypothesis 3</u>

The third hypothesis required determining the perceptions of employers about the need for competency in computer applications for promotion or other career progression for graduates of four-year programs in finance, determining the perceptions of graduates of four-year programs in finance about the need for competency in computer applications for promotion or other career progress, and comparing the perceptions of the two groups.

Parallel questions were posed to the employers and graduates. Two categorical questions and three Likert-type questions were posed to query the respondents about the need for computer competency for

promotion or other career progress. MANOVA was used for the examination of the data related to Hypothesis 3.

## <u>Hypothesis</u> 4

The fourth hypothesis of the study required determining the expectations of both employers and graduates about the use of computer applications in the field of finance during the next five years and comparing the expectations of the two groups. Three Likert-type questions queried the respondents about their expectations. MANOVA was used to test the hypothesis.

# <u>Split-Group Analysis</u>

The graduate group contained individuals whose work experience ranged from a few months to more than five years. The experiences and perceptions of the more recent graduates could differ from those of the earlier graduates. Thus, the graduates were split into two groups, recent graduates (1986-87 and 1987-88 academic years) and earlier graduates (1983-84, 1984-85, and 1985-86 academic years), and the responses of the two groups were compared to the employer group for the four hypotheses addressed in the study. MANOVA was used for the split-group analysis.

# <u>Qualitative Analysis</u>

Both groups, the employers and the graduates, were provided an opportunity to add comments related to their experiences with or as graduates of a four-year program in finance. The responses were recorded and analyzed for patterns that could be traced to the central purpose and hypotheses of the study.

#### Summary

In an attempt to accomplish the primary purpose of this study, a determination of the extent to which computer applications should be incorporated into the finance curriculum at Ferris State University, and the peripheral purpose, development of an effective and efficient mechanism for exploring the efficacy of various business curricula, the methodology for the survey was carefully constructed.

Both a graduate group and an employer group were surveyed about their experiences and expectations. The graduate group included all graduates of the B.S.-Business (Finance) curriculum offered at Ferris State University during the academic years 1983-84 through 1987-88. The employer group was drawn from a sample of all employers located in Michigan and listed in the 1988 <u>Million Dollar</u> <u>Directory</u> published by Dun's Marketing Services, Inc.

The survey instruments used for the study posed nine multipart parallel questions to the graduates and employers. Additional questions of a demographic nature were posed to both the graduates and the employers. The survey design elements and survey instrument format were developed from a process recommended by Dillman (1978) at Washington State University. Data collection took place in fall 1988. The data were coded and entered in late December 1988, with additional coding and entering occurring in January 1989. The data

were analyzed using the SPSS-X package on the mainframe computer at Ferris State University, using ANOVA, MANOVA, and t-tests for the examination of the data.

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# CHAPTER IV

## FINDINGS

The study was designed to collect and analyze information that would facilitate decision making about the extent to which computer applications should be integrated into the finance curriculum offered at Ferris State University. Four hypotheses were explored to determine whether there were differences between graduates of the finance curriculum at Ferris State University and employers located in Michigan in their perceptions of the preparedness of finance graduates for the first professional position, the extent to which computer applications were used in the field of finance, the extent to which computer competencies were necessary for career progress, and the extent to which computer applications in the field of finance would be used in the future. Limited demographic data about both the graduates and the employers were collected. The methodology employed in the study was outlined in Chapter III. The statistical and qualitative analysis of the data collected follows.

## Survey Respondents

### Graduate Group

Survey instruments were mailed to 102 individuals who graduated from the finance curriculum offered at Ferris State University

during the academic years 1983-84 through 1987-88. Forty-eight graduates returned the instruments before the second follow-up, and an additional 12 graduates returned the instruments after the follow-up. The response rate for the graduates was 58.8%. Details of the responses by year of graduation can be found in Appendix N.

<u>Place of employment</u>. The organizations in which the graduates were employed represented 8 of the 11 major categories established for the Standard Industrial Classification Code. The graduates were clustered in finance, insurance, and real estate organizations (43.3%), service organizations (16.7%), and manufacturing organizations (13.3%). None of the graduates were employed in agriculture, forestry, and fishing organizations; mining organizations; or construction organizations. Three of the graduates were in graduate school. Table 1 details the distribution of the graduates among the employment categories.

Type of Organization	Frequency	Percent	
Finance, insurance, real estate	26	43.3	
Service	10	16.7	
Manufacturing	8	13.3	
Public administration	4	6.7	
Transportation	3	5.0	
Retail trade	3	5.0	
Wholesale trade	2	3.3	
Nonclassifiable	. 1	1.7	
Not employed: in graduate school	3	5.0	

<u>Size of employer</u>. The majority of the graduates were employed in small- to medium-sized organizations, 29 (48.4%) in organizations with fewer than 250 employees, and another 8 (13.3%) in organizations with 251 to 500 employees. Seventeen (28.3%) were employed in organizations with 1,001 or more employees. Table 2 shows the distribution of the graduates by size of employer.

Number of Employees	Frequency	Percent	
1 to 250	29	48.4	
251 to 500	8	13.3	
501 to 1,000	3	5.0	
1,001 or more	17	28.3	
Did not respond: in graduate school	3	5.0	

<u>Time to secure position</u>. On average, it took those 47 graduates of the 60 who responded to the survey and who were ever employed in finance 4.53 months after graduation to secure their positions. Nearly one-third (15) of the graduates had a position in the area of finance within 1 month of their graduation, an additional 7 within 2 months, and another 10 within 3 months. The details of the time required to secure a position in the area of finance can be found in Table 3.

Of those 13 graduates who were never employed in the field of finance, 3 were in graduate school working on a master's degree in finance; 2 were practicing accounting, a related field; 1 was a

securities attorney whose profession relied on a knowledge of finance; and another owned his own business in which financial applications were used on a daily basis. Six of the graduates worked in fields not related directly to their major--2 in the military services and 1 each in health care, marketing, sales, and software development.

Number of Months	Frequency	Percent	Cumulative Percent		
1	15	31.9	31.9		
2	7	14.9	46.8		
3	10	21.3	68.1		
4	4	8.5	76.6		
5	2	4.3	80.9		
6	ī	2.1	83.0		
7 to 12	5	10.6	93.6		
16 to 41	3	6.4	100.0		

Table 3.--Graduates employed in finance: Time required to secure position.

#### Employer Group

Survey instruments were mailed to 57 employers who responded to an initial inquiry about their willingness to participate in the survey. The employers were randomly selected from those located in Michigan that were listed in the 1988 <u>Million Dollar Directory</u>. Forty-six employers returned the instruments before the follow-up, and an additional 3 employers returned the instruments after the follow-up. The response rate for the employers was 86.0%. <u>Type of organization</u>. The employers represented 9 of the 11 major categories established for the Standard Industrial Classification Code and were clustered in manufacturing (28.6%); wholesale trade (18.4%); retail trade (16.3%); and financial, insurance, and real estate establishments (14.3%). None of the employers represented mining or public administration organizations. The details of the characteristics of the employers can be found in Table 4.

Table 4.--Employers: Type of organization.

Type of Organization	Frequency	Percent	
Manufacturing	14	28.6	
Wholesale trade	9	18.4	
Retail trade	8	16.3	
Finance, insurance, real estate	7	14.3	
Transportation	3	6.1	
Services	3	6.1	
Agriculture, forestry, fishing	2	4.1	
Construction	2	4.1	
Nonclassifiable	ī	2.0	

Size of the organization. The majority (35 or 71.4%) of the employers were small, employing 250 or fewer employees. Only 2 (4.1%) employed 251 to 500 employees. Nine (18.4%) employed 501 to 1,000 employees, and 3 (6.1%) employed 1,001 or more employees. The details about the size of the respondent employers are shown in Table 5.

Number of Employees	Frequency	Percent
1 to 250	35	71.4
251 to 500	2	4.1
501 to 1,000	9	18.4
1,001 or more	3	6.1

Table 5.--Employers: Size of organization.

Number of finance professionals employed. The majority (38 or 77.5%) of the employers employed 10 or fewer finance professionals, as detailed in Table 6. Two (4.1%) of the employers had no finance professionals on their staffs at the time of the survey. Five (10.2%) employed 11 to 50 finance professionals, and 4 (8.2%) employed 75 to 125. At the time of the survey, the employers had a total of 628 finance professionals on their staffs.

Table	6Emp	loyers:	Number	of	finance	profess	ionals	employ	ed.
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Number of Finance Professionals	Frequency	Percent
0	2	4.1
1 to 10	38	77.5
11 to 50	5	10.2
75 to 125	4	8.2

<u>Plans to hire additional finance professionals</u>. Thirty-nine (79.6%) of the employers planned increases in the number of finance professionals on their staffs during the five years following the survey--from 1 to 25 additional staff members. Collectively, the group planned to employ an additional 147 finance professionals during the 5 years following the survey. The plans of the employers to hire additional finance professionals can be found in Table 7.

Table 7.--Employers: Plans to hire additional finance professionals.

Number of Additional Finance Professionals	Frequency	Percent	
0	10	20.4	
1 to 5	32	65.3	
6 to 10	4	8.2	
15	1	2.0	
25	2	4.1	

#### <u>Hypothesis Testing</u>

## <u>Hypothesis 1: Preparation for</u> <u>First Professional Position</u>

The first hypothesis was developed to determine whether the employer and graduate groups held similar views about the preparation of finance majors for their first professional positions. The hypothesis, in its null form, was stated as follows:

There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for the first professional position in the finance field.

MANOVA was used as a test of significance for the four questions related to this hypothesis. A Wilks' lambda value of .66878 produced an F-value of 12.38136 and a probability of .0001 (Table 8). Thus, there was a statistically significant difference between the two groups in their perceptions of the preparedness of the graduates for their first professional position.

MANOVA: Wil	ks'lambda =	a = .66878 F = 12.38136		.38136	p = .0001*		
ANOVA:	Emplo (n =	Employers (n = 49)		Graduates (n = 60)			
Variables	Mean	SD	Mean	SD	t	р	
Adequacy of academ preparation	nic 2.8542	0.618	2.4167	0.809	3.09	.003*	
Competency with wo processing	ord 2.5306	1.063	3.1207	1.326	-2.51	.014*	
Competency with spreadsheets	1.7347	0.811	2.5345	1.487	-3.36	.001*	
Competency with data bases	2.0204	0.803	3.3860	1.278	-6.46	.0001*	

Table 8.--Employers' and graduates' perceptions of adequacy of undergraduate preparation for first professional position.

\*Significant at or beyond the .05 level.

<u>Academic preparation</u>. The employers perceived the graduates to be less well prepared academically for their first professional position than did the graduates view their state of academic preparation. The mean of the employers' responses on the five-point Likert-type scale was 2.8542, toward Adequately Prepared, whereas the mean of the graduates' responses was 2.4167, toward Well Prepared. The difference between the two groups was statistically significant (p = .003).

<u>Competency in computer applications</u>. Further, the employers viewed competency in the use of word processing, spreadsheets, and data bases as more important at hiring than did the graduates. On the five-point Likert-type scale, the employers viewed competency with the use of word processing in the range between Important and Moderately Important (mean = 2.5306), whereas the graduates viewed the competency as Moderately Important (mean = 3.1207). The difference between the two groups was statistically significant (p = .014).

The differences between the two groups on their views toward the need for competency with the use of spreadsheets and data bases were more striking. The employers viewed competency in the use of spreadsheets as Important (mean = 1.7347), whereas the graduates viewed the competence as Moderately Important (mean = 2.5345). The difference was statistically significant (p = .001). With respect to the use of data bases, the employers responded that the competency was Important (mean = 2.0204), whereas the graduates responded that the competency was Moderately Important (mean = 3.3860). Again, the difference was statistically significant (p = .0001).

<u>Split-group analysis</u>. The population of graduates of the finance curriculum included some who had been in the job market more than five years and some who had been on the job only a month or so.

Thus, a split-group analysis was performed to determine whether there were differences between the earlier and more recent graduates, compared to the employers.

MANOVA was performed with the graduates split into two groups, the earlier graduates defined as those who graduated in the academic years 1983-84, 1984-85, and 1985-86 (n = 32) and the more recent graduates defined as those who graduated in the academic years 1986-87 and 1987-88 (n = 28). The data associated with each of the four hypotheses were analyzed.

On the question of adequacy of the preparation of graduates for their first professional position, MANOVA produced a Wilks' lambda value of .64946, an F-value of 5.96132, and a probability of .0001 (Table 9). Thus, there were statistically significant differences among the three groups, the two groups of graduates and the employers, with the application of the split-group analysis.

Comparison of graduate groups. Further analysis revealed that the two graduate groups held similar views about the adequacy of their academic preparation and their need for competency in the use of word processing, spreadsheets, and data bases for their first professional position. The two graduate groups responded that they were Well Prepared academically for their first professional position (early graduates mean = 2.4063, recent graduates mean = 2.4286, p = .417). They responded that their need for competency in the use of word processing in their first professional position was Moderately Important (early graduates mean = 3.3438, recent graduates mean = 2.8462, p = .795). They responded that their need

MANOVA:	Wilks' lamb	da = .64946		F = 5.9	16132	H d	•0001					
ANOVA: Variables	Grou Grad (n = 1	p I: ly uates 32)	Group Group Gradu	11: nt ates 28)	Group Employ (n = 4;	111: ers 9)	Grou		Grou		Group vers Croup	
	Mean	SD	Mean	SD	Mean	SD	Lt.	٩	LF CF	٩	ц	٩
Adequacy of academic preparation	2.4063	0.756	2.4286	0.879	2.8542	0.618		.417	-2.90	.005*	-2.47	.016*
Competency with word processing	3.3438	1.285	2.8462	1.347	2.5306	1.063	1.43	.795	3.10	•003*	1.11	.269
Competency with spread- sheets	2.5625	1.605	2.5000	1.364	1.7347	0.811	.16	.875	3.07	•003+	3.05	•003*
Competency with data bases	3.3750	1.431	3.4000	1.080	2.0204	0.803	07	.942	5.45	•0001*	6.20	•0001*

Table 9.--Split-group analysis of graduates' and employers' perceptions of adequacy of undergraduate preparation for first

\*Significant at or beyond the .05 level.
for competency in the use of spreadsheets was Important to Moderately Important (early graduates mean = 2.5625, recent graduates mean = 2.5000, p = .875). With respect to the need for competency in the use of data bases, the two graduate groups responded that their need was Moderately Important (early graduates mean = 3.3750, recent graduates mean = 3.4000, p = .942). There were no statistically significant differences between the two graduate groups.

Comparison of graduates with employers. Consistent with the findings related to Hypothesis 1 where the graduates as a single group were compared to the employers, there were significant differences between the graduates and the employers on all measures, regardless of the time since graduation for the graduates, with but one exception: The more recent graduates held views similar to the employers with respect to expected competency in the use of word processing. Both the more recent graduates (mean = 2.8462) and the employers (mean = 2.5306) viewed competency in the use of word processing at hiring as Important to Moderately Important. There were no statistically significant differences in their views (p = .269) with respect to the need for competency in word processing at hiring.

<u>Summary of Hypothesis ]</u>. Not only did the multivariate test yield significance; each of the four univariate tests and the splitgroup analysis yielded significance as well. The employers thought the graduates less well prepared for the first professional position than did the graduates themselves. Furthermore, employers viewed

computer competency at hiring as being more important than did the graduates. Therefore, Hypothesis 1 was rejected.

### Hypothesis 2: Use of Computer Applications

The second hypothesis was developed to determine whether the employer and graduate groups had similar experience with the use of computer applications. The null hypothesis was as follows:

There is no difference in the extent to which finance professionals employed by selected employers located in Michigan and graduates of an undergraduate degree program in finance use computer applications in their present positions.

MANOVA was used to examine the three questions related to the hypothesis. A Wilks' lambda value of .86535 produced an F-value of 5.34212 and a probability of .002 (Table 10). Thus, there was a statistically significant difference between the two groups in their experience with the use of computer applications in the field of finance.

<u>Use of word processing</u>. The two groups had similar experience with the use of word processing. Asked about the current use of word processing by professionals in the area of finance, the employers responded that word processing was used Occasionally (mean = 2.7551). The graduates responded that they used word processing Occasionally (mean = 2.8621). There was no statistically significant difference between the two groups (p = .675) in their use of word processing.

MANOVA: I	lilks'	lambda =	.86535	F = 5.	34212	p = .	002*
ANOVA:		Emplo (n =	yers 49)	Gradua (n = 6	tes 0)		
Variables		Mean	SD	Mean	SD	t	р
Use of word processing		2.7551	1.164	2.8621	1.420	42	.675
Use of spreadsh	eets	1.7959	1.040	2.5172	1.501	-2.84	.005*
Use of data base	es	2.3673	1.131	3.2069	1.448	-3.30	.001*

Table 10.--Employers' and graduates' experience with current use of computer applications.

\*Significant at or beyond the .05 level.

<u>Use of spreadsheets</u>. The two groups had dissimilar experience with the use of spreadsheets. The employers responded that finance professionals in their organizations used spreadsheets Frequently (mean = 1.7959). The graduates responded that they used spreadsheets Frequently to Occasionally (mean = 2.5172). There was a statistically significant difference between the two groups (p = .005) in their use of spreadsheets.

<u>Use of data bases</u>. The difference between the employers and the graduates was greater with respect to the use of data bases. The employers responded that finance professionals in their organizations used data bases Frequently (mean = 2.3673). The graduates responded that they used data bases Occasionally (mean = 3.2069). A probability of .001 indicates the statistically significant difference between the two groups.

<u>Split-group analysis</u>. The findings with respect to the splitgroup analysis of the experience with the use of computer applications in the field of finance revealed statistically significant differences among the early graduates, recent graduates, and employers. Application of MANOVA produced a Wilks' lambda value of .81778, an F-value of 3.59765, and a probability of .002 (Table 11). These findings were consistent with the results obtained when the graduates as a single group were compared with the employers.

Comparison of graduate groups. Further analysis revealed that the early graduates and recent graduates had similar experience with the use of word processing and spreadsheets. Both groups used word processing Occasionally (early graduates mean = 2.8438, recent graduates mean = 2.8846). There was no statistically significant difference between the graduate groups (p = .914). Both groups also used spreadsheets Occasionally (early graduates mean = 2.4688, recent graduates mean = 2.5769). Again, there was no statistically significant difference between the groups (p = .788).

Graduates' experience with the use of data bases differed, however; the early graduates were more likely to be using data bases than were the recent graduates. The early graduates responded that they used data bases Occasionally (mean = 2.8750), whereas the recent graduates responded that they used data bases Rarely (mean = 3.6154). The difference was near but not at statistical significance (p = .052).

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MANOVA:	Wilks' lam	bda = .81	778	н Н Н С	.59765		) = .002*					
ANOVA:	Group Earl Gradu	l: y ates	Group Gradu	nt ates	Group Employ	111: ers	Grou Grou	P   sus 	Group		Group Group	= <u>s</u> =
Variables	(n = Mean	32) SD	Mean	28) SD	(n = 4) Mean	sD	CL CL	<u>م</u>	<u>ب</u>	٩	<b>ب</b>	٩
Use of word processing	2.8438	1.505	2.8846	1.336	2.7551	1.164		416.	30	.776	44.	.665
Use of spread- sheets	2.4688	1.565	2.5769	1.447	1.7959	1.040	27	.788	2.33	.023*	2.69	*600*
Use of data bases	2.8750	1.497	3.6154	1.299	2.3673	1.131	-1.99	.052	1.74	.087	4.32	.0001*
*Significa	nt at or hev	ett	OS level									

:  **Early graduates compared with employers.** The experience of the early graduates and the finance professionals employed by the employer group were similar with respect to the use of word processing but differed with respect to the use of spreadsheets and data bases. Both the early graduates and the finance professionals employed by the employer group used word processing Occasionally (early graduates mean = 2.8438, employers mean = 2.7551). At a probability of .766, the difference was not statistically significant.

The early graduates responded that they used spreadsheets Occasionally (mean = 2.4688), whereas the finance professionals employed by the employer group used spreadsheets Frequently (mean = 1.7959). The difference between the two groups was statistically significant (p = .023). Furthermore, the early graduates used data bases Occasionally (mean = 2.8750), but the finance professionals employed by the employer group used data bases Frequently (mean = 2.3673). Yet the difference was not statistically significant (p = .087).

Recent graduates compared with employers. The differences between the recent graduates and the finance professionals employed by the employer group were greater than those between the early graduates and the employer group. The experience with the use of word processing was similar, but the experience was quite different with the use of spreadsheets and data bases. The recent graduates responded that they used word processing Occasionally (mean = 2.8846). The employers responded that finance professionals in

their organizations used word processing Occasionally (mean = 2.7551). The difference was not statistically significant (p = .665). However, the recent graduates used spreadsheets Occasionally (mean = 2.5769), whereas the finance professionals employed by the employer group used spreadsheets Frequently (mean = 1.7959). The difference was statistically significant (p = .009). The recent graduates used data bases Rarely (mean = 3.6154). The employer group reported that their finance professionals used data bases Frequently (mean = 2.3673). The difference between the two groups was statistically significant (p = .0001).

<u>Summary of Hypothesis 2</u>. Hypothesis 2 was rejected. The probability associated with the Wilks' lambda statistic for the MANOVA was .002, both for the initial testing of the hypothesis and for the split-group analysis. Finance professionals employed by the employer group used computer applications more frequently than did the graduates.

## <u>Hypothesis 3: Computer Competency</u> <u>for Career Progress</u>

The third hypothesis explored in the study was developed to determine whether the two groups held similar expectations about the need for computer competency for career progression. The null hypothesis was as follows:

There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for career progress in the finance field. MANOVA was used to analyze the five questions related to the hypothesis. A Wilks' lambda value of .57262 yielded an F-value of 15.07655 and a probability of .0001 (Table 12). Consequently, there was a statistically significant difference between the two groups in their expectations about the need for competency in computer applications for career progress.

MANOVA: Wilks'	lambda =	.57262	F = 15	.07655	p = .	0001*
ANOVA:	Emplo (n =	oyers 49)	Gradua (n = 6	ites i0)	<b>.</b>	
Variadies	Mean	SD	Mean	SD	t	р
Competency needed for career progress	1.2449	0.434	1.8793	0.329	-8.59	.0001*
Importance of word processing	2.8367	1.106	3.3051	1.380	-1.92	.058
Importance of spreadsheets	2.0204	0.946	2.5763	1.465	-2.29	.024*
Importance of data bases	2.4490	0.891	3.2203	1.353	-3.42	.001*
Training required	1.2449	0.434	1.4500	0.502	-2.25	.026*

Table 12.--Employers' and graduates' perceptions of computer competency needed for career progress.

\*Significant at or beyond the .05 level.

<u>Impact on career progress</u>. The employers expected the career progress of finance professionals to be negatively affected if they were not competent in the use of computer applications. The mean of the employers' responses to the first Yes-No question was 1.2449, near the Yes response; the mean of the graduates' responses was 1.8793, near the No response. The difference in the responses was statistically significant (p = .0001).

<u>Competency in computer applications</u>. The employers viewed competency in the use of word processing, spreadsheets, and data bases as being more important for career progress than did the graduates. The employers responded that competency in the use of word processing was Important (mean = 2.8367). The graduates responded that competency in the use of word processing was Moderately Important (mean = 3.3051). Yet there was no statistically significant difference in the two groups' views about the need for word processing for career progress (p = .058).

The groups' views were more divergent with respect to the need for competency in the use of spreadsheets and data bases for career progress. The employers viewed competency in the use of spreadsheets as Important (mean = 2.0204), and the graduates viewed the competency as Moderately Important (mean = 2.5763). There was a statistically significant difference in their views (p = .024).

With respect to the need for competency in the use of data bases for career progress, the employers viewed the competency as Important (mean = 2.4490). The graduates viewed the competency as Moderately Important (mean = 3.2203). The difference in their views was statistically significant (p = .001).

<u>Training in computer applications</u>. The last question related to Hypothesis 3 was asked to determine whether training in computer

applications was required for professionals in the finance area. On the Yes-No response questions, the mean of the employers' responses was 1.2449, and the mean of the graduates' responses was 1.4500. Again, the difference between the two groups was statistically significant (p = .026).

<u>Split-group analysis</u>. With the examination of the split-group analysis of those questions related to the need for computer competency for career progress, MANOVA produced a Wilks' lambda value of .54246, an F-value of 7.15468, and a probability of .001 (Table 13). Therefore, there were statistically significant differences among the groups.

Comparison of graduate groups. The split-group analysis revealed that the early graduates and recent graduates held similar views about the need for computer competency for career progress. Asked whether their career progress had been affected because they were not competent in computer applications, the early graduates responded No (mean = 1.9063), as did the recent graduates (mean = 1.8462). There was no statistically significant difference in their responses (p = .493).

Asked about the importance of competency in word processing for career progress, the early graduates responded that the competency was Moderately Important (mean = 3.2500). The recent graduates also responded that the competency was Moderately Important (mean = 3.3704). There was no statistically significant difference in their responses (p = .742).

MANOVA.	L ledlim	, polymer	- 5431	<u>u</u>	E = 7	15468		*1000					
				0	-		י ב						
ANOVA: Variables	Cr Gr Gr	up l srly = 32	: sə (	Group Recei Graduč (n = 2	: nt ates 28)	Group Employ (n = 45	: ers 9)	Group ver: Group	l d sus	Group versu Group	- 21	Group versu Group	_ s
	Mean	-	SD	Mean	SD	Mean	SD	tt.	٩	L,	٩	ب	٩
Computer compe- tency needed for career progress	1.906	33 0	.296	1.8462	0.368	1.2449	0.434	.69	.493	7.54	• 0001*	6.00	.0001
Importance of word processing	3.250	e e	414,	3.3704	1.363	2.8367	1.106	<b>-</b> .33	.742	1.47	.145	1.85	.068
lmportance of spreadsheets	2.500	2	.481	2.6667	1.468	2.0204	0.946	43	.667	1.78	<b>670.</b>	2.33	•022*
Importance of data bases	3.000	0 1	414.	3.4815	1.252	2.4490	168.0	-1.37	.175	2.15	• 034*	4.17	•0001*
Computer training required	1.375	o 0	.492	1.5357	0.508	1.2449	0.434	-1.24	.219	1.25	.215	2.66	•010*

\*Significant at or beyond the .05 level.

With respect to the importance of competency in the use of spreadsheets for career progress, the early graduates responded that the competency was Important to Moderately Important (mean = 2.5000), as did the recent graduates (mean = 2.6667). Again, there was no statistically significant difference in their responses (p = .667).

Graduates' views also were similar with respect to their perceptions of the importance of competency in data bases for career progress. The early graduates responded that the competency was Moderately Important (mean = 3.000). The recent graduates responded that the competency was Moderately Important as well (mean = 3.4815). There was no statistically significant difference in the perceptions of the two graduate groups (p = .175).

Asked about their employers' requirement for training in computer applications, the early graduates' response was in the direction of Yes (mean = 1.3750). The recent graduates' response was in the direction of No (mean = 1.5357). Yet there was no statistically significant difference between the two groups (p = .219).

Early graduates compared with employers. When the responses of the graduates as a single group were compared to the responses of the employers on the questions related to Hypothesis 3, there were statistically significant differences in all areas except in the importance of competency in word processing for career progress. The split-group analysis revealed that the early graduates held perceptions similar to the employers with respect to the importance

of competency in the use of spreadsheets and that their experience with respect to requirements for training in computer applications was similar. Furthermore, the early graduates' views toward the need for competency in data bases were somewhat closer to the employers' views than was revealed in the earlier analysis.

The early graduates responded that competency in the use of spreadsheets was Important to Moderately Important to their career progress (mean = 2.5000). The employers responded that the competency was Important to the career progress of finance professionals (mean = 2.0204). Yet there was no statistically significant difference between the early graduates' and the employers' views about the importance of competency in the use of spreadsheets for career progress (p = .079).

The early graduates responded that their employers required training in computer applications (mean = 1.3750). The employers required training in computer applications for their professionals in the area of finance (mean = 1.2449). Thus, there was no statistically significant difference between the early graduates and the employers in their requirements for training in computer applications (p = .215).

Although the statistically significant difference remained between the early graduates and the employers with respect to the importance of competency in data bases for career progress (p =.034), the differences were not as great as when the graduates as a single group were compared to the employers (p = .001). The early

graduates viewed competency in data bases as Moderately Important (mean = 3.000); the employers viewed the competency as Important to Moderately Important (mean = 2.4490).

Recent graduates compared with employers. The split-group analysis revealed that the views of the recent graduates differed more from the employers than did the views of the early graduates. These results were consistent with the findings where the responses of the graduates as a single group were compared to those of the employers. Only in the views about the need for competency in word processing were the recent graduates and employers similar (p =.068). The recent graduates responded that competency in word processing was Moderately Important (mean = 3.3704), as did the employers (mean = 2.8367).

In all other areas, there were statistically significant differences between the recent graduates and the employers. The recent graduates did not expect competency in computer applications to be a factor in their career progress; the employers did (recent graduates mean = 1.8462, employers mean = 1.2449, p = .0001). The recent graduates responded that competency in spreadsheets was Moderately Important to their career progress; the employers viewed the competency as Important (recent graduates mean = 2.6667, employers mean = 2.0204, p = .022). The recent graduates viewed competency in data bases to be Moderately Important to Of Little Importance; the employers viewed the competency to be Important to Moderately Important (recent graduates mean = 3.4815, employers mean = 2.4490, p = .0001). Finally, the employers of the recent graduates tended not to require training in computer applications, whereas the employer group tended to require training for their professionals in the area of finance (recent graduates mean = 1.5357, employers mean = 1.2449, p = .010).

<u>Summary of Hypothesis 3</u>. Overall, the employer group viewed the need for competency in computer applications to be more important for career progress than did the graduates of the finance program. The multivariate tests of significance yielded significance, at a probability of .0001 with the graduates compared as a single group with the employer group and .002 with the splitgroup analysis. Thus, Hypothesis 3 was rejected.

## <u>Hypothesis 4: Future of Computer</u> <u>Applications in Finance</u>

The fourth hypothesis developed for the study was designed to determine whether the two groups held similar views about the use of computer applications in the field of finance in the future. The null hypothesis was as follows:

There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the use of computer applications in the field of finance during the next five years.

MANOVA was used to analyze the three questions related to the hypothesis. A Wilks' lambda value of .89819 produced an F-value of 3.85405 and a probability of .012 (Table 14). Thus, there was a statistically significant difference between the two groups in their perceptions of the use of computer applications in finance in the future.

MANOVA:	Wilks'	lambda =	.89819	F = 3.	85405	p = .	012*
ANOVA:		Emplo (n =	oyers 49)	Gradua (n = 6	tes 0)		
Variadies		Mean	SD	Mean	SD	t	р
Use of word processing		2.4286	0.957	2.2414	1.081	.94	.349
Use of spreadsh	eets	1.4694	0.581	1.6379	1.021	-1.02	.308
Use of data bas	es	1.6327	0.727	2.1228	1.151	-2.57	.012*

Table 14.--Employers' and graduates' expectations about the use of computer applications in the future.

\*Significant at or beyond the .05 level.

<u>Future use of word processing</u>. Examination of the responses to the three questions related to the hypothesis revealed that the two groups held similar views about the future use of word processing and spreadsheets in the area of finance but divergent views about the future use of data bases. Both groups expected word processing to be used frequently in the future by professionals in the area of finance. The mean of the employers' responses was 2.4286, the mean of the graduates' responses 2.2414. There was no statistically significant difference in their responses (p = .349).

<u>Future use of spreadsheets</u>. The expectations of the two groups were similar with respect to the expected use of spreadsheets in the area of finance in the future. The mean of the employers' responses was 1.4694. The mean of the graduates' responses was 1.6379. There was no statistically significant difference in their responses to this item (p = .308). Both groups expected spreadsheets to be used frequently.

<u>Future use of data bases</u>. The two groups differed, however, in their expectations about the use of data bases by finance professionals in the future. The mean of the employers' responses to this item was 1.6327, a response that falls between Very Frequently and Frequently. The mean of the graduates' responses was 2.1228. The graduates expected data bases to be used Frequently. There was a statistically significant difference in the expectations of the two groups (p = .012).

<u>Split-group analysis</u>. In the split-group analysis of the views toward the expectations about the use of computer applications in finance in the future, MANOVA produced a Wilks' lambda value of .88768, an F-value of 2.0662, and a probability of .059 (Table 15). There were no statistically significant differences among the three groups, inconsistent with the findings in the exploration of the hypothesis with the graduates compared as a single group with the employers.

**Comparison of graduate groups.** The split-group analysis revealed that there were no statistically significant differences between the early graduates and the recent graduates. The early graduates responded that they expected word processing to be used Frequently by finance professionals in the future (mean = 2.1667), as did the recent graduates (mean = 2.3214). The probability

tutu	.e.													
MANOVA:	Wilks	l amb.	da = .8	8768		F = 2.0	<b>)6662</b>	٩	<b>=</b> .059					
ANOVA: Variables	ن ت <sup>ق</sup> قت ا	oup arly aduat	1: tes 2)	Cro Gra	up 11 cent duate = 28)	•••• •Ø	Group Employ( (n = 4 <u>5</u>	ers 9)	Grou	P   sus 1	Grou		Group versu Group	= s=
	Mear	c	SD	Mean	S	Ģ	Mean	SD	LL LL	٩	LL LL	٩	LL LL	٩
Use of word processing	2.16(	67	1.147	2.321/	- -	020	2.4286	0.957	۰.5 ب	.543	-1.09	.378	- 46	.646
Use of spread- sheets	1.53	33	1.074	1.750	0.0	967	1.4694	0.581	81	.424	.34	.732	1.59	.115
Use of data bases	2.00(	8	1.232	2.259	3 <b>).</b>	059	1.6327	0.727	- 85	104.	1.67	660*	3.04	• 003*

Table 15.--Split-group analysis of graduates' and employers' expectations about the use of computer applications in the

\*Significant at or beyond the .05 level.

associated with the responses was .543. The early graduates and recent graduates expected spreadsheets to be used Frequently (early graduates mean = 1.5333, recent graduates mean = 1.7500, p = .424). The early graduates and recent graduates also expected data bases to be used Frequently (early graduates mean = 2.000, recent graduates mean = 2.2593, p = .401).

Early graduates compared with employers. Furthermore, there were no statistically significant differences between the early graduates and the employers. Both groups responded that they expected word processing to be used Frequently by finance professionals in the future (early graduates mean = 2.1667, employers mean = 2.4286, p = .378). Both groups expected spreadsheets to be used Frequently (early graduates mean = 1.533, employers mean = 1.4694, p = .732). Both groups also expected data bases to be used Frequently (early graduates mean = 2.000, employers mean = 1.6327, p = .099).

Recent graduates compared with employers. There were no statistically significant differences between the recent graduates and the employers with respect to their expectations concerning the use of word processing and spreadsheets in the future. Both the recent graduates and the employers expected word processing to be used Frequently by finance professionals in the future (recent graduates mean = 2.3214, employers mean = 2.4286, p = .646). Both expected spreadsheets to be used Frequently (recent graduates mean = 1.7500, employers mean = 1.4694, p = .115). The groups differed in

their views about the use of data bases, however. The recent graduates expected data bases to be used Frequently (mean = 2.2593), and the employers expected data bases to be used Frequently as well (mean = 1.6327), yet the differences in their expectations were statistically significant (p = .003).

<u>Summary of Hypothesis 4</u>. Hypothesis 4 was rejected. The basic test of the hypothesis using MANOVA yielded a probability of .012. The MANOVA for the split-group analysis yielded a probability of .059, approaching but not at significance. Overall, the analysis revealed that the employer group expected computer applications to be used more frequently in the future than did the graduates.

## Qualitative Analysis

# Employer Group

Eight (16%) of the 49 respondent employers provided comments on that part of the survey instrument that gave them the opportunity to comment. Six of the employers identified skills other than knowledge of financial applications that were needed by graduates of finance programs. In addition, one respondent explained that, with the increased use of computers, his organization did not need to hire additional finance staff. One explained the perspective from which he completed the survey instrument.

Only one employer identified the need for technical skills other than those in the area of finance. The employer stated that the graduates needed a basic understanding of accounting as well as finance. Other comments were directed toward the need for communication, problem-solving, and people skills. One employer wanted graduates with common sense in both coping with business matters and dealing with people. Another commented that the graduates did not know how to motivate themselves. Still another commented that graduates who had had a cooperative education or internship experience were better employees than those who had not had such experiences.

Most of the employers who provided comments perceived the need for graduates of an undergraduate program in finance to possess something more than technical competence. The edited comments made by the employer group can be found in Appendix O.

## Graduate Group

Twenty-seven (45%) of the 60 graduate respondents provided comments. Twenty-two of the graduates identified skills other than those in the area of finance that they needed in their employment. Others lamented the lack of internship and placement opportunities. Five criticized the quality of instruction received in the advanced finance courses in the program. One graduate suggested that two specialties be developed for the program, one in investments and the other in corporate finance. Eight of the graduates commented that their program had provided them with a good basic knowledge of the field of finance. On the other hand, one graduate expressed regret for having taken the program.

Among the citations of other skills needed, 13 of the graduates identified a need for greater computer competency, especially in the

area of spreadsheet analysis. Five identified a need for greater knowledge in such areas as economics, investments, marketing, taxes, and accounting. Three graduates reflected upon a need for better writing and communication skills. One expressed a need for greater skill in understanding and interpreting financial information.

As did the employers, most of the graduates recognized a need for skills other than the basic finance skills. The edited comments of the graduate group can be found in Appendix P. Any comments made about specific individuals at Ferris State University were omitted.

## Summary of Qualitative Analysis

Too few of the employers provided comments for those comments to be generalized to the entire sample of employers. Nevertheless, the comments may be of peripheral value as curricular change is being considered, particularly because the comments were focused on skills or knowledge needed in areas other than finance.

The graduates' comments also were focused on skills other than those in the area of finance that were needed in their employment. These comments, too, may be of peripheral value as curricular change is under consideration.

### <u>Summary of Findings</u>

## Survey Respondents

Sixty graduates of the finance program offered at Ferris State University responded to the survey. The graduates completed their programs during the academic years 1983-84 through 1987-88. The graduates were employed in a wide range of organizations but were clustered in finance, insurance, and real estate organizations; service organizations; and manufacturing organizations. The majority were employed in small- to medium-sized organizations. Three-fourths of the graduates had secured a position in their field within four months after graduation.

Forty-nine employers located in Michigan responded to the survey. The majority operated as manufacturing organizations; wholesale or retail trade organizations; and finance, insurance, and real estate organizations. Most were small, employing 250 or fewer employees and 10 or fewer finance professionals. Nevertheless, the employers had a total of 628 finance professionals on their staffs and anticipated hiring an additional 147 professionals during the five years following the survey.

## Hypothesis Testing

MANOVA was used as a test of significance of the four hypotheses developed for the study. Each of the four null hypotheses was rejected.

With the test of the first hypothesis, there was a statistically significant difference between the employer group and the graduate group in their perceptions of the preparedness of graduates of an undergraduate degree in finance for their first professional position. The employers thought the graduates were less well prepared for their first professional position than did the graduates.

The second hypothesis was developed to determine whether finance professionals employed by the employer group and the graduates had similar experience with the use of computer applications. There was a statistically significant difference between the two groups, the finance professionals employed by the employer group using computer applications more frequently than the graduates.

There was a statistically significant difference between the two groups in their perceptions of the need for computer competency for career progress, the focus of the third hypothesis of the study. The employer group viewed the need for competency in computer applications to be more important for career progress than did the graduates of the finance program.

The fourth hypothesis of the study was developed to determine whether the two groups had similar expectations about the use of computer applications in the field of finance in the future. Again, there was a statistically significant difference in their views. The employer group expected computer applications to be used more frequently in the future than did the graduates.

## Qualitative Analysis

The concentration of the narrative comments provided by both the employer group and the graduate group was on the need for skills or knowledge in areas other than finance. The respondents identified competencies that ranged from behavioral to more technical areas such as accounting and economics.

## CHAPTER V

## SUMMARY, CONCLUSIONS, RECOMMENDATIONS, AND REFLECTIONS

#### Summary

## <u>Purpose</u>

The primary purpose of this study was to determine the extent to which computer applications should be incorporated into the curriculum of an undergraduate program in finance. A peripheral purpose was to attempt to develop a survey methodology for exploring the extent to which career-oriented curricula were perceived as adequately preparing graduates for the early years of their professional careers.

#### <u>Hypotheses</u>

The assumption underlying the primary purpose was that finance majors require competency in computer applications in order to be perceived by employers as job fit and ready for career progress. Thus, to examine the need for integrating computer applications into the finance curriculum, four hypotheses were developed. Stated in their null form, the hypotheses were as follows:

<u>Hypothesis 1</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for the first professional position in the finance field.

<u>Hypothesis 2</u>: There is no difference in the extent to which finance professionals employed by selected employers located in Michigan and graduates of an undergraduate degree program in finance use computer applications in their present positions.

<u>Hypothesis 3</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the need for competency in computer applications for career progress in the finance field.

<u>Hypothesis 4</u>: There is no difference between selected employers located in Michigan and graduates of an undergraduate degree program in finance in their perceptions of the use of computer applications in the field of finance during the next five years.

#### Search of the Literature

A search of the literature was undertaken to identify the use of computer applications in the field of finance. A concurrent search was conducted to identify studies that dealt with integrating computer applications in vocationally oriented programs in higher education.

A number of articles illustrated the use of computer applications in the field of finance. The daily work of financial analysts has been automated, with predictions of even more technological changes for the future. The investment of vast sums of money in the hands of institutional traders has been facilitated using computer applications. Independent financial planners are using computer applications for a variety of tasks. Expert systems, well established in medical and scientific applications, are beginning to be applied in business, especially for corporate financial management and investment purposes. Manufacturers of computer systems are targeting specific segments of the finance industry with their marketing efforts. The senior operations officers of more than 300 financial institutions have predicted an increasing application of computer technology.

<u>Computer applications in vocationally oriented programs</u>. Few articles or studies directly addressed the integration of computer applications into vocationally oriented programs in higher education. However, one Canadian community college system has developed a process that includes regular assessments of the vocational competencies needed by the work force within the system's educational mandate and has brought together major employers to identify occupational areas undergoing rapid change. A survey of insurance educators revealed limited computer integrations into the curriculum but also elicited predictions of increased integrations because of the expectations of the insurance industry and the improved capabilities of computers.

Three studies were directed toward the need for integrating technology into the curriculum. One exhaustive study, directed to organizations that employ graduates of four-year programs in office administration, led to the conclusion that there was little evidence that the business curriculum was being revised to adapt to the technological advances already implemented in office settings. Another study designed to determine the need for computer applications in two-year postsecondary programs in accounting found that employers tended to place a greater emphasis on computer skills than did graduates and instructors and that students valued the

skills more highly than did instructors. The third study, focusing on business education programs and surveying both employers and instructors, found a high degree of congruence existed between the employers and instructors in their perceptions of the need for computer competencies.

Thus, the need for the study was reinforced both by the evidence of the use of computers in the field of finance and by the dearth of publications that dealt with integrating computer applications in vocationally oriented programs in higher education.

### Methodology

The methodology for the research was constructed to accomplish both the primary and peripheral purposes of the study. Both graduates of an undergraduate program in finance and employers of finance professionals were surveyed. The graduate group included all graduates of the B.S.-Business (Finance) curriculum offered at Ferris State University during the academic years 1983-84 through 1987-88. The employer group was drawn from a sample of all employers located in Michigan, listed in the 1988 <u>Million Dollar</u> <u>Directory</u> published by Dun's Marketing Services, Inc.

The survey instruments constructed for the survey posed nine multipart parallel questions to both the graduates and the employers. As well, demographic questions were posed to both groups. The survey design elements and survey instrument format were adopted from a process recommended by Dillman (1978) at Washington State University.

e P f

ac Su Data collection took place in fall 1988. The data were coded and entered into the mainframe computer system at Ferris State University during late 1988 and early 1989. Each hypothesis was examined using MANOVA, specifically Wilks' lambda, ANOVA, and t-tests to test for statistical significance at the p = .05 level. The demographic information was organized, as were narrative comments provided by the respondents.

#### <u>Findings</u>

<u>Graduate group</u>. Sixty graduates of the finance program offered at Ferris State University responded to the survey. The graduates were employed in a wide range of organizations but were clustered in finance, insurance, and real estate organizations. The majority were employed in small- to medium-sized organizations. Threequarters of the graduates secured a position in their field within four months after graduation.

<u>Employer group</u>. Forty-nine employers located in Michigan responded to the survey. The majority operated as manufacturing organizations; wholesale or retail trade organizations; and finance, insurance, and real estate organizations. Most were small, employing 250 or fewer employees and 10 or fewer finance professionals. Nevertheless, the employers had a total of 628 finance professionals on their staffs and anticipated hiring an additional 147 professionals during the five years following the survey.

## Hypothesis Testing

<u>Hypothesis 1</u>. The first hypothesis was developed to determine whether there was a difference between the graduate group and the employer group in their perceptions of the preparedness of graduates of an undergraduate program in finance for their first professional position. Testing at the .05 level of significance and using MANOVA, a Wilks' lambda value of .66878 produced an F-value of 12.38136 and a probability of .001 in the examination of the four questions related to the hypothesis. The employers thought the graduates to be less well prepared for their first professional position, especially in the area of computer competency, than did the graduates.

<u>Hypothesis 2</u>. The second hypothesis was designed to determine whether finance professionals employed by the employer group and the graduates of the finance program had similar experience with the use of computer applications. MANOVA was used to examine the three questions related to the hypothesis. A Wilks' lambda value of .86535 produced an F-value of 5.34212 and a probability of .002. The finance professionals employed by the employer group were found to use computer applications more frequently than the graduates.

<u>Hypothesis 3</u>. The third hypothesis focused on the perception of the need for skill in computer applications for career progress for finance professionals. With the application of MANOVA to analyze the five questions related to the hypothesis, a Wilks' lambda value of .57262 yielded an F-value of 15.07655 and a probability of .0001. The employer group viewed the need for

competency in computer applications to be more important for career progress than did the graduates of the finance program.

<u>Hypothesis 4</u>. The focus of the fourth hypothesis was on the expectations of the two groups about the use of computer applications in the area of finance in the future. MANOVA was used to analyze the three questions related to the hypothesis. A Wilks' lambda value of .89819 produced an F-value of 3.85405 and a probability of .012. The employer group expected computer applications to be used more frequently than did the graduates.

In the examination of each of the four hypotheses, there was a statistically significant difference between the perceptions and expectations of the employer group and those of the graduate group. Thus, each null hypothesis was rejected.

## <u>Qualitative Analysis</u>

Few of the employers provided narrative comments. Those few comments cannot be generalized to the sample of employers. The comments did focus, however, on the need for skills or knowledge in areas other than finance. The comments of the graduates also focused on the need for skills or knowledge outside the area of finance.

## <u>Conclusions</u>

### Integration of Computer Applications

The findings of the study suggest that computer applications should be incorporated into the undergraduate program in finance offered at Ferris State University. Business journals contain ample evidence of the use of computer applications in the field of finance, as well as the use of increasingly sophisticated computer Even more sophisticated technology is expected to be technology. applied in the future. The employers who participated in the survey provided evidence that they expect professionals in the area of finance to be computer competent at hiring and that the finance professionals employed in their organizations use computer applications. The employers also require computer competency for career progress. The employers expect computer technology to be used even more in the future. Although the intensity of their responses was not as great as that of employers, the graduates provided evidence that they need computer competency both for employment in the field and for career progress, use computer applications in their work, and expect computer technology to be used even more in the area of finance in the future.

### Survey Methodology

As well, the survey methodology proved effective for exploring the need for the integration of career-specific skills into the curriculum. The design of the survey instrument permitted the collection of basic demographic information about the respondents that will prove useful both for curriculum development and for advising students about career development. The provision of space for narrative comments permitted the respondents to express concerns that can also be addressed in the curriculum-development process. Allowing the respondents to request a summary of the survey results served as a public relations measure that should improve the image of the university and facilitate contact with those respondents in the future.

The use of multiple contacts to the target survey groups undoubtedly led to a higher response rate than would have been possible with a single contact. As well, the use of the lessexpensive initial contact to both target groups provided a mechanism for correcting addresses before mailing the more expensive package including the survey instrument, return envelope, and cover letter.

The use of the <u>Million Dollar Directory</u> as a source of employers also proved productive. Although the costs associated with the mailing to the original sample of 680 were high, the costs were less than acquiring mailing lists from professional associations and then screening down to eligible employers who were willing to participate in the study. As well, the returns from the initial inquiry provided an adequate pool of employers who were knowledgeable about computer applications in the field of finance and who freely shared information about their organizations.

## Recommendations

### Further Research

Although both the employer group and the graduate group perceived a need for computer competency in the area of finance, there nevertheless was a statistically significant difference in the magnitude of their perceptions. Why the statistically significant difference? Does the profile of the employer group differ significantly from the profile of the employers of the graduates? If so, are the graduates thus barred from entry into some employment opportunities because they do not have the competencies required by some employers? Does the profile of the graduate group differ significantly from the profile of the finance professionals employed by the employer group? For example, do the finance professionals employed by the employer group have advanced degrees? Or are they 20-year veterans in the field? Such characteristics could account for the differences between the employers' responses and the graduates' responses, especially when one considers that the graduates had been practicing in the field only one to five years. Such questions warrant further study if greater precision is required in the making of decisions about integrating computer applications into the curriculum.

Likewise, although the survey methodology proved effective for identifying the need for the integration of computer applications into the finance curriculum, the extent to which those applications should be integrated was not identified. Further research should be conducted to identify more precisely the specific kinds and extent of computer applications needed in the field of finance.

## Replication of the Study

Finally, the study should be replicated in the future on a regular, continuous basis if Ferris State University wishes to ensure a fit between the career-specific training provided by the

university and the needs of the employers of graduates of the finance program. The emerging technologies, such as expert systems, also should be incorporated as a topic for examination. Furthermore, the career-specific content of the study could easily be adjusted to adapt to the career-specific needs of other programs. Thus, Ferris State University as well as other colleges and universities should adopt the methodology to examine the current and future requirements of other vocationally oriented programs.

## <u>Reflections</u>

The results of the study provide clear direction for the need to integrate computer applications into the baccalaureate program in finance offered at Ferris State University. Those faculty most closely associated with the program can use the results to guide their decision making and support recommended changes through the approval process for curriculum change. The study can be replicated in the future to provide indications of whether the curriculum is keeping pace with the expectations of the market for the graduates of the program.

As well, because the process associated with curriculum change and approval is typically time consuming, the faculty can nevertheless advise students to take general computer applications courses and to expand their thinking about prospective employment opportunities. For example, the vast majority of the graduates were employed in finance, insurance, and real estate organizations and in service establishments. On the other hand, the employers were
clustered in manufacturing, wholesale trade, and retail trade establishments. The evidence seems clear that the graduates are overlooking important career options.

Not only do the results have implications for curriculum development and career development for the graduates; implied are needs for professional development for the faculty as well. At the time of the study, only two of the six principal faculty associated with the finance program at Ferris State University were sufficiently skilled themselves to integrate computer applications into the courses they teach. The lack of professional skills in computer applications among the faculty may well prove a significant barrier to needed curriculum change.

Yet if curriculum change does not occur, the program may cease to be viewed as a viable program by both employers and prospective students. Therefore, the results of the study will be summarized and shared with the principal faculty associated with the finance program in the hope that the faculty will consider curriculum change and take the steps necessary to improve their own computer skills.

As well, the faculty associated with other vocationally oriented programs offered by the university will be encouraged to adapt the survey methodology to explore the extent to which those programs match the needs and expectations of the employer market.

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APPENDICES

APPENDIX A

SURVEY INSTRUMENT: GRADUATE GROUP



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THE CONNECTION:

- 1. How well do you think your degree program at Ferris State University (FSU) prepared you for your first professional position? (Circle your answer)
  - 1. VERY WELL PREPARED
  - 2. WELL PREPARED
  - 3. ADEQUATELY PREPARED
  - 4. INADEQUATELY PREPARED
  - 5. POORLY PREPARED
- 2. In your first professional position after graduation from FSU, how important was it for you to have competency in computer applications? (Circle your answer in each category)

WORD PROCESSING

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

#### SPREADSHEET

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

#### DATABASE

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

3. To what extent do you use computer applications in your present position? (Circle your answer in each category)

.

WORD PROCESSING

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### SPREADSHEET

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### DATABASE

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER
- 4. At any time since your graduation, has your career progress been affected because you were NOT competent in computer applications? (Circle your answer)
  - I. YES

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2. NO

5. How important is competency in computer applications for you to be promoted or otherwise progress in your career? (Circle your answer in each category)

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WORD PROCESSING

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

SPREADSHEET

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

#### DATABASE

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT
- 6. Have you been required to have training in computer applications since you graduated from FSU? (Circle your answer)
  - I. YES
  - 2. NO

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How was this training provided? (Circle ALL answers that apply)

- I. BY EMPLOYER
- 2. THROUGH FORMAL COURSEWORK
- 3. BY COMPUTER OR SOFTWARE VENDOR
- 4. OTHER (SPECIFY)

7. What is the extent to which you expect computer applications to be used in the field of finance during the next five years? (Circle your answer in each category)

WORD PROCESSING

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

SPREADSHEET

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### DATABASE

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER
- 8. What are the characteristics of your present employer? (Fill in the blanks)

TYPE OF BUSINESS:

APPROXIMATE NUMBER OF EMPLOYEES:

Finally, we would like to ask a few questions about your professional life to help interpret the statistical results.

- 9. What year did you graduate from FSU? (Circle your answer)
  - 1983-84
    1984-85
    1985-86
    1986-87
  - 5. 1987-88
- 10. In your degree program at FSU, did you have computer applications in any of the following courses?

	5			
		(Cire	cle you	r answer)
		YES	NO	DID NOT TAKE
FIN 220	Real Estate Finance	1	2	3
FIN 230	Financial Markets and Institutions	1	2	3
FIN 300	Mathematics of Finance	L	2	3
FIN 322	Financial Management I	1	2	3
FIN 323	Financial Management 2	I	2	3
FIN 451	Investment Principles	I	2	3
FIN 454	Portfolio Management	1	2	3
FIN 465	Case Problems in Finance	I	2	3
FIN 475	Seminar in Finance	1	2	3
D-P 205	Microcomputer Applications	1	2	3

11. Are you presently employed in a position related to your major? (Circle your answer)

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1.	YES -		
2.	NO		, I
			<b>'</b>
	I.		How long after graduation did it take you
			to get your first position related to your
	i		major?
	•		·
	<b>\$</b>		
	to your	major? YES -	(Circle your answer)
	2	NO	*
	2.		•
		•	How long after graduation did it take you
		•	to get your first position related to your
			major?
		•	· •
		<u>.</u>	

Are you presently employed? (Circle your answer)

1. YES 2. NO

12. If you are not now or have never been employed in the area of finance, please give the reason in the space provided below.

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Is there anything else that you would like to tell us about your professional training at Ferris State University? If so, please use this space for that purpose.

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Your participation in this survey is greatly appreciated. If you are interested in a summary of the results, please print your name and address on the back of the enclosed envelope (NOT on this questionnaire).

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APPENDIX B

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PRELIMINARY REPORT TO SURVEY RESPONDENTS

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#### THE CONNECTION: COMPUTER APPLICATIONS AND CAREER SUCCESS IN FINANCE A PRELIMINARY REPORT

In the fall of 1988, 102 graduates of the finance program at Ferris State University and 680 employers throughout the state of Michigan were sent surveys designed to determine if the perceptions between the groups differed in such areas as adequacy of university training in finance and the need for computer competency for hiring and career advancement. The purpose of the survey was to identify the extent to which computer applications need to be incorporated into the finance curriculum at Ferris State University.

Of the 102 graduates contacted for the survey, 59 responded to the survey. The group contacted included all graduates of the finance program from the 1983-84 academic year through the 1987-88 academic year.

The initial group of 680 employers contacted was selected randomly from Dun & Bradstreet's <u>1988 Million Dollar Directory</u>. The employers were asked if they employed graduates of four-year university programs in finance and if they were willing to participate in the survey. Of the 126 employers who responded to the first inquiry, fifty-seven (45% of the respondents) indicated a willingness to participate in the survey. Of those 57, forty-nine (86%) employers completed and returned the survey instrument.

In nearly every area of inquiry explored in the survey, the graduates' perception differed from the employers' perception. For example, the first major question posed in the survey asked the graduates and the employers to reflect upon how well an undergraduate degree in finance prepared graduates for their first professional position. Fifty-six percent (33) of the graduates responded that they were well or very well prepared; only twenty-five percent (12) of the employers thought that employees with an undergraduate degree in finance were well or very well prepared. Thirty-six percent (21) of the graduates responded that they were adequately prepared; an overwhelming 63% (31 respondents) of the employers found the graduates only adequately prepared. Eight percent (5) of the employers found the graduates inadequately prepared. Clearly, there are differences in perception between the two groups and those differences are statistically significant.

The next question posed in the survey asked how important it was for individuals hired in their first professional position to be competent in the use of computer applications, specifically in the use of word processing, spreadsheets, and databases. Again, there are statistically significant differences in the responses of the two groups.

Asked how important it was for newly-hired professionals to be competent with the use of word processing, fifty-six percent (43) of the graduates responded that the competency was moderately important, important, or very important; eighty-four percent (41) of the employers thought competency in word processing to be moderately important, important, or very important. Forty-one percent (24) of the graduates responded that competency in word processing was of little or no importance while only sixteen percent (8) of the employers thought the competency to be of little or no importance.

The differences were even more striking with respect to competency in the use of spreadsheets and databases. Sixty-nine percent (41) of the graduates and ninety-eight percent (48) of the employers responded that competency in the use of spreadsheets was moderately important, important, or very important; twenty-seven percent (16) of the graduates and only one employer thought the competency of little importance or unimportant. With respect to competency in the use of databases, forty-six percent (27) of the graduates and ninety-eight percent (48) of the employers thought the competency moderately important, important, or very important; fifty-one percent (30) of the graduates and two percent (1) of the employers thought the competency of little importance or unimportant. Two graduates did not respond to the series of questions.

The third question posed to the graduates and employers asked about the extent to which computer applications were used by professionals in their. respective organizations. The two groups were in substantial agreement about the use of word processing; sixty-eight percent (40) of the graduates and seventy-one percent (35) of the employers responded that professionals use word processing occasionally, frequently, or very frequently; and twenty-nine percent (17) of the graduates along with twenty-nine percent (14) of the employers responded that word processing was used rarely or never. Significant differences arise in the use of spreadsheets and databases however. Seventy-three percent (43) of the graduates but ninety-two percent (45) of the employers responded that spreadsheets are used occasionally, frequently, or very frequently; twenty-four percent (14) of the graduates but only eight percent (4) of the employers responded that spreadsheets were used rarely or never. Even greater differences were evident with the use of databases. Fifty-three percent (31) of the graduates contrasted with eightysix percent (42) of the employers responded that databases were used occasionally, frequently, or very frequently. Forty-four percent (26) of the graduates but only fourteen percent (7) of the employers responded rarely or never. Two graduates did not respond to this series of questions.

Asked if the career progress of finance professionals would be affected because they were NOT competent in computer applications, only twelve percent (7) of the graduates responded in the affirmative while seventy-six percent (37) of the employers did. In contrast, eighty-five percent (50) of the graduates responded that career progress would not be affected while only twenty-four percent (12) of the employers saw no impact on career progress. Two graduates did not respond to the question. Again, the differences are significant.

The differences in perception remained consistent throughout the balance of the survey, although the two groups were somewhat closer in their perceptions about the use of computer applications in the future. Why the differences? The statistics do not reveal the reasons for the differences. The results do suggest, however, that the graduates have found employment in organizations that have less need or fewer expectations for competency in computer applications. The respondent employers, on the other hand, have a higher need for and higher expectations for competency in computer applications.

In addition, the results reveal that the profile of the organizations in which the graduates are employed differs from the profile of the respondent employer group. Furthermore, the differences between the two profiles are significant. For example, forty-nine percent (29) of the graduates work in organizations that employ 250 or fewer employees while seventy-one percent (35) of the respondent employers employ 250 or fewer employees. On the other hand, twenty-seven percent (16) of the graduates work in organizations that employ more than 1,000 employees while only six percent (3) of the respondent employees while only six percent (3) of the respondent employers employ more than 1,000 employees. The graduates are clustered in manufacturing (12%), services (17%), and financial (44%) organizations. The employers represent primarily financial (14%), retail trade (16%), wholesale trade (18%), and manufacturing (29%) organizations.

Throughout the next several months, the data will be further analyzed in an attempt to reach conclusions about the significance of the results, especially with respect to recommended changes in the finance curriculum at Ferris State University. In the meantime, the researcher expresses appreciation to those graduates and employers who participated in the survey.

For further information, contact: Wanda V. Smith, Management Department, School of Business, Ferris State University, Big Rapids, MI 43907.

\*Report prepared from responses received as of 12-21-88.

prelim.rpt

APPENDIX C

INITIAL INQUIRY: EMPLOYER GROUP

## Ferris State University

October 10, 1988

Mr. John P. Jones ABC Hardware 123 North Main Street Bigtown, MI 23456

Dear Mr. Jones:

One of the primary missions of many universities is to prepare job-ready graduates. Thus, it is vitally important to higher education to find out what employers think about the quality of the preparation of its graduates.

During the month of November, a group of employers selected from Dun & Bradstreet's <u>Million Dollar Directory</u> will be surveyed to learn what they think about the preparation of their employees who are graduates of a four-year program in finance. The information will be used to make decisions about the future direction of the undergraduate program in finance at Ferris State University. The survey questionnaire is short, containing only eleven questions, and will take only a few minutes of your time to complete.

Would you please answer the questions listed below and return this letter in the enclosed envelope by October 24, 1988. If your organization qualifies for inclusion in the survey, the questionnaire will be mailed to you on November 1, 1988.

Thank you for your response.

Sincerely,

Nou Au H. Smith Wanda V. Smith, Professor and Bead, Management Department

Do you employ graduates of four-year college or university programs in finance? (Circle your answer)

1. Yes 2. No

Are you willing to participate in the study? (Circle your answer)

1. Yes 2. No

Who is the best person in your organization to provide information for this survey?

NAME:

TITLE:

School of Business • Big Rapids, Michigan 49307 • (616) 592-2427

APPENDIX D

SURVEY INSTRUMENT: EMPLOYER GROUP

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- 1. How well do you think employees with an undergraduate degree in finance are prepared for their first professional position? (Circle your answer)
  - I. VERY WELL PREPARED
  - 2. WELL PREPARED
  - 3. ADEQUATELY PREPARED
  - 4. INADEQUATELY PREPARED
  - 5. POORLY PREPARED
- 2. How important is it to your organization that professionals newly hired in the area of finance be competent in the use of computer applications? (Circle your answer in each category)
  - WORD PROCESSING
    - I. VERY IMPORTANT
    - 2. IMPORTANT
    - 3. MODERATELY IMPORTANT
    - 4. OF LITTLE IMPORTANCE
    - 5. UNIMPORTANT

#### SPREADSHEET

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

#### DATABASE

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

3. What is the extent to which computer applications are used by professionals in the area of finance in your organization? (Circle your answer in each category)

.

WORD PROCESSING

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### SPREADSHEET

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### DATABASE

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER
- 4. Would the career progress of a finance professional in your organization be affected because they were NOT competent in computer applications? (Circle your answer)

•

- I. YES
- 2. NO

5. How important is computer competency for promotion or other career progress for professionals in the finance area in your organization? (Circle your answer in each category)

**WORD PROCESSING** 

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

SPREADSHEET

- J. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT

#### DATABASE

- I. VERY IMPORTANT
- 2. IMPORTANT
- 3. MODERATELY IMPORTANT
- 4. OF LITTLE IMPORTANCE
- 5. UNIMPORTANT
- 6. Is training in computer applications required for professionals in the finance area in your organization? (Circle your answer)

\$

- I. YES -----
- 2. NO

How is training in computer applications provided for professionals in the finance area in your organization? (Circle ALL answers that apply)

- I. IN-HOUSE
- 2. FORMAL COURSEWORK OUTSIDE THE ORGANIZATION
- 3. COMPUTER OR SOFTWARE VENDOR
- 4. OTHER (SPECIFY): \_\_\_\_\_

7. What is the extent to which you expect computer applications to be used by professionals in the finance area in your organization during the next five years? (Circle your answer in each category)

WORD PROCESSING

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

SPREADSHEET

- I. VERY FREQUENTLY
- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

#### DATABASE

I. VERY FREQUENTLY

.

- 2. FREQUENTLY
- 3. OCCASIONALLY
- 4. RARELY
- 5. NEVER

Finally, we would like to ask a few questions about your organization that will help interpret the statistical results.

- 8. What is the major area of business operations for your firm? (Circle your answer)
  - a. Agriculture, forestry, and fishing
  - b. Mining
  - c. Construction
  - d. Manufacturing
  - e. Transportation, communication, electric, gas, and sanitary services
  - f. Wholesale trade
  - g. Retail trade
  - h. Finance, insurance and real estate
  - i. Services
  - j. Public administration
  - k. Nonclassifiable establishment
- 9. What is the total number of employees in your organization? (Fill in the blank)
- 10. How many professionals does your organization employ in the finance area? (Fill in the blank)
- 11. How many professionals in the finance area does your organization expect to employ five years from now? (Fill in the blank)

Is there anything else that you would like to tell us about your employees who are graduates of undergraduate programs in finance? If so, please use this space for that purpose.

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Your participation in this survey is greatly appreciated. If you are interested in a summary of the results, please print your name and address on the back of the enclosed envelope (NOT on this questionnaire).

APPENDIX E

ENDORSEMENT: FERRIS STATE UNIVERSITY

# Ferris State University

August 10, 1988

To Whom it May Concern:

Wanda V. Smith, Associate Professor and Head of the Management Department in the School of Business at Ferris State University, is undertaking research to satisfy the requirements of the Ph.D. in College and University Administration at Michigan State University. The results of the research also may be used to recommend curricular change in the B.S. - Business (Finance) program, if the results of the research warrant recommendations for change.

Professor Smith has the full support of the university in the endeavor. She may have access to such records and equipment that will facilitate the research. She is given permission to use the official letterhead stationery and envelopes in the external contacts and to sign correspondence with her professional title.

Aderelv

Richard C. Hansen, Dean School of Business

dlf

APPENDIX F

LOGS: GRADUATE GROUP AND EMPLOYER GROUP

LOG: GRUDHIE GROUP

	-	i Introd	hction			Postcard			
code #	l News	Mailed	Returned   Call	Aniled	Returned	Reminder   Mailed	Pollowp Nailed	Sumary Requested	Comments
-	l Carol Sue Brunner	11/01		10/17	12/01	10/24	<b>1</b> 1/11		
7	Michael R. Florip	11/01		10/17	10/28	10/24			
m	Michelle T. Reeves	11/01		10/17	10/20			Yes	
-	James E. Campbell	11/01		10/17		10/24	11/11		
ŝ	Shann E. Gregg	11/01		10/17		10/24	<b>H</b> I/II		
9	i Marvin L. Johnston	11/01		10/17		10/24	<b>N</b> I		
٢	Scot J. Kettlewell	11/01		10/17	10/26	10/24		Yes	
60	i Michael E. Kreager	11/01		10/17	11/22	10/24	<b>H</b> IVII	Yes	
0	Joel M. Lipps	11/01		10/17	10/28	10/24		Yes	
9	I Mark A. Medina	11/01		10/17	10/27	10/24		Yes	
Ħ	Thomas J. Price	11/01	~ ~ ~ ~	10/17		10/24	<b>NIVI</b>		
ជ	Muriel A. Lukazcek	11/01		10/17	10/26	10/24		Yes	Notified of name change
ព	Thomas J. Rewers	11/01		10/17		10/24	<b>N</b> I/II		•
71	James S. Selke	11/01		10/17	10/31	10/24		Yes	
51	Scott M. Sproull	10/11		10/17		10/24	<b>1</b> 1/11		
16	John G. Stanford	10/11	**	10/17		10/24	<b>N</b> IA		
17	Timothy A. Sturm	10/11		10/17	10/21				
18	l Daniel R. Terem	10/11		10/17	80/11	10/24			
ମ	Christopher J. Zimmer	10/11		10/17		10/24	<b>N</b> I		
8	Carl W. Seiter	10/11		10/17		10/24	<b>P</b> I/TI		
ส	Cassie A. Sullivan	11/01		10/17		10/24	PI/II		
ឧ	Samuel D. Sweet	10/11		10/17		10/24	<b>F</b> I/I		

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LOG: GNUCHE CEOP

		Introd	uct ion			Postcard				
Code 4			Call	Mailed	Returned	Mailed	Mailed	Requested	Coments	
ន	Mary Kay Young	10/1		10/17	10/24			Yes	Notified of name change	
54	Gregory A. Brabec	10/11		10/17	10/26	10/24				
52	Mark A. Newhouse	10/11		10/17	10/27	10/24		Yes		
36	I C. J. Drouillard	10/11		10/11	60/TT	10/24				
2	John G. Ehinger	10/11		10/17		10/24	<b>1</b> 1/11			
28	Melissa J. Stermon	10/11		10/17	11/03	10/24				
53	David M. Trudgeon	11/01		10/17		10/24	PI/II			
30	Samuel J. Dean	10/11		10/17	10/24			Yes		
31	Corey L. Fish	10/1		10/17	12/01	10/24	<b>1</b> 1/11	Yes		
32	Bridget Fitzpatrick	10/11		10/17		10/24	<b>1</b> 1/11			
33	David G. Johnson	10/11		10/17		10/24	11/11			
34	Renee T. Re	10/11		10/17	10/24			Yes		
35	Mark E. Jurczyk	10/1		10/17	01/11	10/24				
36	Colleen L. Kenny	10/11		10/17	122/21	10/24	11/14			
37	Christopher Mattison	10/11		10/17		10/24	11/14			
38	Joseph E. Murphy	10/11		10/17	10/31	10/24				
<b>6</b> E	Dwight J. Preston	10/11		10/17	10/28	10/24		Yes		
4	Carol A. Schmeiser	10/11		10/17	10/26	10/24				
4	Sidney C. Seymout	10/11		10/17		10/24	<b>1</b> 1/11			
4	Ronald W. Thomas II	10/11		10/17	10/20					
4	Kevin T. Timm	10/11		10/17	12/01	10/24	11/14			
\$	l Karla A. Malker	11/01		10/17		10/24	11/11			

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<b>EINDO</b>
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		Introd	Detrion		a interest	Poetcard			
Code #			T	Nailed	Returned	Mailed	Mailed	Requested	Coments
	Geoffrey S. Boynton	ידואסד		71/01	10/24				
<b>4</b>	Brian B. Babank	11/01	10/18	10/17					Could not obtain new addr.
6	Michael R. Murray	דד/סד		10/17	60/11	10/24		Yes	
8	David Y. Cardiner III	10/11		10/17	10/24				
6 <b>4</b>	Paul VandenBrook	וואסנ		10/17	12/12	10/24	PI/TI		
22	Kimberly A. Brown	וושנו		10/17	10/26	10/24		Yes	
21	Jemes H. Calvin	דואסנ	10/24	10/17					Student called-resent 12/5
22	Sharon T. Kram	11/01		10/17	11/22	10/24	<b>N</b> I/II	Yes	Notified of name change
8	John M. Boyd	וואסנ		10/17	10/21				
3	Blake W. Brooks	דואסנ		10/17		10/24	11/11		
22	Christopher J. Carter	10/11		10/17	10/31	10/24		Yes	
8	Rick J. Coemer	10/11		10/17	10/26	10/24		Yes	
23	Brian J. Buter	11/01		10/17		10/24	PI/II		
89	Randy C. Joppie	דדאסד		10/17		10/24	PI/II		
20	Ann Marie Lingle	11/01		10/17	11/11	10/24	<b>1</b> 1/11	Yes	Notified of name change
99	David W. O'Bara	11/01		10/17	10/20				
5	Mart W. Pavlish	10/01		10/17	10/26	10/24			
62	John M. Randle	10/11		10/17	10/31	10/24			
8	Scott K. Schieberl	11/01		10/17	12/08	10/24	11/11		
3	Nancy J. Slagh	10/11	@	10/17	10/28	10/24		Yes	
65	Alice D. Smith	11/01		10/17	10/24				
8	Thomas D. Soper	11/01		10/17		10/24	11/11		

LOGE GRADINEE GROUP

		Intro	Inction			Postcard			
Code #		Nailed	Returned	Mailed	Returned	Nailed	Pollowp Mailed	Sumary Requested	Coments
6	Jeff A. Stachler	10/11		10/17		10/24	1/14		Recv'd. new addr 10/24
89	Cynthia L. Scoville	11/01		10/17	61/21	10/24	PT/TT		Recv'd. new addr 10/19
69	Christopher W. Dornan	10/11		10/17		10/24	11/11		
2	Glenn R. Swartz	10/01		10/17	10/21				
2	James W. Dingle, Jr.	11/01		10/17		10/24	<b>FI/II</b>		
72	Kirsten A. Cardey	11/01		10/17		10/24	PI/II		
3	Glenn B. Cawley	10/11		10/17		10/24	<b>1</b> 1/11		
2	Louis P. Kurant III	11/01		10/17	10/26	10/24		Yes	
75	Michael J. Cherghezan	10/11		10/17	10/24			Yes	
1 76	Michael J. Cook	11/01		10/17	61/21	10/24	11/14	Yes	
7	Kevin J. Fedema	10/1		10/17	10/20				
- 18	Tracey A. Fitzpatrick	10/1	-	10/17	10/26	10/24		Yes	
62	Cerald L. Grimus	11/01		10/17	10/20			Yes	
8	Michael A. Bopkins	10/1		10/17	1 71/11	10/24	PI/II	Yes	
8	John F. Boyt	10/1		10/17	10/21	10/24	<b>1</b> 1/11	Yes	
8	Russel J. Jacobson	10/1		10/17		10/24	<b>N</b>		
8	Jolayne E. Johnston	10/11		10/17	10/21				
2	Victor E. Kurdziel	10/11		10/17	-	10/24	11/1		Recv'd. new addr 10/19
8	Roger J. Mason	10/11		10/17	10/24			Yes	
8	Bussell B. Norkoli	10/1		10/17	10/21				
66	Stephen T. Root	10/11		10/17	12/01	10/24	<b>1</b> 1/1		
88	Scott J. Winder			10/17	-	10/24	. 11/11		Recv'd. new addr 10/20

LOGE GRADINE GOUP

		Introd	uction			Postcard			
  Code #		Mailed   	Returned	Nailed	Returned	Mailed	<b>Followp</b> Mailed	Summry Requested	Comments
68	James E. Bush	10/11		10/17	11/04	10/24		Yes	
8	l Sanjeev Agramal	11/01		10/17		10/24	<b>1</b> 1/11		
6	Ralph T. Albers	11/01		10/17		10/24	11/14		
	Timothy G. Fritz	11/01	12/06	10/17		10/24	<b>FIVIT</b>		Retn'd. too late to resend
8	Roland G. Qundermen	11/01	~	10/17		10/24	PI/II		
6	Sherry A. Diegel	11/01		10/17	12/01	10/24	PI/II	Yes	Name and address change
	Benjamin J. McMullen	11/01		10/17	<b>6</b> 0/TT	10/24		Yes	
8	Brian M. Clarkson	11/01		10/17	11/02	10/24			Recv'd. new addr 10/19
6	Susan C. DeSantis	10/11	-	10/17		10/24	<b>NI/II</b>		
86	Wendy J. Kowalski	11/01	10/18						Could not obtain new addr.
6	Robert L. LaPorte, Jr	10/11		10/17		10/24	FI/II		
<b>0</b>	Lynda O. Thompson	10/11		10/17		10/24	FI/II		
101 101	Mark A. Reinhard	10/11		10/17		10/24	FI/II		
102	Calvin D. Skalski	11/01		10/17		10/24	11/14		
							-		

#### LOG: EMPLOYER GROUP

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		Ouestic	maire	Postcard	1	1
Code ±	   Namo	   Majle7	Beturned	Reminder	Followup	Beneary
01						
01	ADBOTTS MEAT, INC.	111-01-00				
02	ACCURATE TAPE & LABEL 	  11-01-88	   11-18-88	  TT-03-88		
03	ISRAELS DESIGNS, INC.	11-01-88 	11-09-88 	 		I NO
04	JOHN LUMBER & HOWRE	11-01-88 	i —	11-09-88	11-29-88 	i —
05	KAHLBAUM BROS., INC.	11-01-88	11-17-88	11-09-88	—	ND
06	LAKESIDE FARM	11-01-88		11-09-88	11-29-88	
07	MRC, INC.	11-01-88	11-08-88	—		NO
08	SAPER GALLERIES	11-01-88	11-08-88	. —		NO
09	SALS FIFTH AVENUE	11-01-88	11-14-88	  11-0988		NO
10	SCIENTIFIC BRAKE EQT.	11-01-88	11-14-88	  11-09-88	<u></u>	NO I
11	CASWELL & CO., INC.	11-01-88	11-09-88			NO
12	CITIZENS TRUST & SVGS	11-01-88		  11-09-88	11-29-88	
13	COLONIAL CENTRAL SVGS	11-01-88	11-18-88	  11-09-88	<u> </u>	NO
14	HOLT EQUIPMENT CO.	11-01-88	11-08-88	-		NO
15	HURON VALLEY SALES	11-01-88	   11-09-88	! —		NO
16	INDUSTRIAL STEEL CO.	11-01-88		11-09-88	   11-29-88	ļ —
17	MACAULEYS, INC.	11-01-88	   11-09-88		 	NO
18	REFRIGERATION RESEARC	11-01-88	   11-17-88	  11-09-88		OM I
19	SECURITY BANK	11-01-88	11-09-88			NO
20	STEVENS GROUP, INC.	11-01-88		11-09-88	11-29-88	
21	SUMMIT HOLDINGS CORP.	  11-01-88	11-04-88	i —	i —	NO

#### LOG: ENPLOYER GROUP

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1	[	Questic	maire	Postcard		
l Code #	Neme	   Mailed	Returned	Reminder Mailed	Followup Mailed	Summery Requested
22	AMERICAN FIBRIT, INC.	11-01-88	11-04-88	—		NO
23	AUTO STYLE, INC.	11-01-88	11-09-88			
24	BOND SUPPLY COMPANY	11-01-88		11-09-88	11 <b>298</b> 8	
25	CADILLAC RUBBER & PL.	11-01-88		11-09-88	11 <b>-29-8</b> 8	
26	C.L. GRANSDEN & CO.	11-01-88		11 <b>-09-8</b> 8	11 <b>298</b> 8	—
27	COMPLETE AUTO TRANSIT	11-01-88	11-08-88			NO
28	DONNELLY CORPORATION	11-01-88	11-10-88	11-09-88		NO
29	DUNDEE CEMENT CO.	11-01-88		11-09-88	11-29-88	
30	EATON STAMPING CO.	11-01-88	11-04-88			NO
31	EDWARDS OIL SERVICE	11-01-88		11-09-88	11-29-88	
32	ELLIS ETAL ASSOCIATES	11-01-88	11-04-88	—		NO
33	HARTSIG SUPPLY CO.	11-01-88	11-08-88			NO
34	HOLBROOK-PATTERSON.	11-01-88	11-04-88			NO
35	INACOMP COMPUTER CENT	11-01-88	11 <b>178</b> 8	11-09-88		NO
36	J. M. WILSON CORP.	11-01-88	11 <b>098</b> 8	—		NO
37	LAKE SUPERIOR RAILROA	11-01-88	11-17-88	11-09-88		NO
38	MICHIGAN FINANCIAL CO	11-01-88	11-08-88	—		YES
39	NED GRAND HAVEN	11-01-88	11-09-88	—	—	NO
40	NED UNION BANK	11-01-88	11 <b>098</b> 8	—		NO
41	R. W. MEAD & COMPANY	11-01-88	11-08-88	—		NO
42	SECURITY BANK N.E.	11-01-88	11-08-88	—		NO

### IOG: EMPLOYER GROUP

		Questic	maire	Postcard		
				Reminder	Followup	Sumary
Code #	Name	Mailed	Returned	Mailed	Mailed	Requested
43	UNISTRUT DETROIT SVC.	11-01-88	11-08-88			NO
44	WICKES MFG. COMPANY	11-01-88	11-09-88			NO
45	WITMARK INCORPORATED	11-01-88	11-08-88	—		NO
46	BATTLE CREEK FARM BUR	11-01-88	11-04-88			NO
47	BLUE WATER PLASTICS	11-01-88	11-17-88	11-09-88		NO
48	DESHANO CONSTRUCTION	11-01-88	11-17-88	11-09-88		NO
49	HASTINGS MUTUAL INS.	11-01-88	11-08-88			YES
50	J. A. MARELE COMPANY	11-01-88		11-09-88	11-29-88	i —
51	JOBBERS WAREHOUSE SVC	11-01-88	11-09-88			NO
52	MAIN & COMPANY	11-01-88		11-09-88	11 <b>-29-8</b> 8	i —
53	MARSHAL E. CAMPBELL	11-01-88	11-10-88	11-09-88		NO
54	MODERN PLASTICS CORP	11-01-88	11-04-88			NO
55	NORTHERN MOTOR CO.	11-01-88	11-09-88	—		NO
56	PRESSURE VESSEL SERV	11-01-88	11-17-88	11-09-88		NO
57	ver hage of holland	11-01-88	11-08-88	—		NO
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APPENDIX G

INTRODUCTORY LETTER: GRADUATE GROUP

October 10, 1988

Jane M. Jones 123 East Oak Street Smalltown, MI 12345

Dear Jane:

One of the primary objectives of Ferris State University is to provide educational programs that enable students to obtain positions in business and industry and to advance in their chosen career field. To ensure that graduates of our finance program are attaining the goals they have set for themselves, and as part of the research required for my Ph.D. program at Michigan State University, I am conducting a survey that is intended to give me your views about your academic preparation and to provide me with information about your employment as well. A similar survey is being distributed to selected employers in the state. When the survey of both graduates and employers is completed, I hope to have information that will provide some guidance about the future direction of the finance program at Ferris.

The study will focus upon graduates of the finance program between the academic years of 1983-84 and 1987-88. All graduates of the finance program from Ferris during those years are being contacted to participate in the study. On October 17, 1988, the survey questionnaire will be mailed to you. I hope that you will take a few minutes to complete the questionnaire and return it in the envelope that will be provided. I am convinced that your participation in the survey will assist future students in the program as well as prospective employers in Michigan and elsewhere.

Thank you for your attention. Please do not hesitate to contact me at the address or telephone number listed below if you have any questions about the survey or its purpose.

Sincerely,

Wondo V. Snith

Wanda V. Smith, Professor and Bead, Management Department

dlf

APPENDIX H

SURVEY COVER LETTERS: GRADUATE GROUP

October 17, 1988

Jane M. Jones 123 East Oak Street Smalltown, MI 12345

Dear Jane:

A week ago, I wrote you about a study that is being undertaken to provide information about the future direction of the finance program at Perris State University. The information will be used also as part of the research required in my Ph.D. program at Michigan State University.

Please take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope.

Your responses to the questionnaire will be kept confidential. The number on the questionnaire is used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

If you have any questions about the purpose of the survey or completion of the questionnaire, please contact me at the address or telephone number listed below.

Thank you for your participation.

Sincerely, Neauda V, Smith Norda V, Smith Professor

Wanda V. Smith, Professor and Head, Management Department

dlf

October 19, 1988

Joan A. Jones 456 West Elm Avenue Northtown, MI 67890

Dear Joan:

One of the primary objectives of Ferris State University is to provide educational programs that enable students to obtain positions in business and industry and to advance in their chosen career field. To ensure that graduates of our finance program are attaining the goals they have set for themselves, and as part of the research required for my Ph.D. program at Michigan State University, I am conducting a survey that is intended to give me your views about your academic preparation and to provide me with information about your employment as well. A similar survey is being distributed to selected employers in the state. When the survey of both graduates and employers is completed, I hope to have information that will provide some guidance about the future direction of the finance program at Ferris.

The study will focus upon graduates of the finance program between the academic years of 1983-84 and 1987-88. All graduates of the finance program from Ferris during those years are being contacted to participate in the study. Please take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope.

Your responses to the questionnaire will be kept confidential. The number on the questionnaire is used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

If you have any questions about the purpose of the survey or completion of the questionnaire, please contact me at the address or telephone number listed below.

Thank you for your participation.

Sincerely,

Wanda V. Smith, Professor and Bead, Management Department

dlf

APPENDIX I

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POSTCARD REMINDER: GRADUATE GROUP

Wanda V. Smith, Head Management Department Ferris State University Big Rapids, MI 49307

2-34250



America the Beautiful USA 15

Jane M. Jones 123 East Oak Street Smalltown, MI 12345

Dear Jane:

Have you completed and returned the brief questionnaire that asks about your experiences as a graduate of the finance program at Ferris State University? If you have, thank you for your participation. If you have not, may I urge you to do so in order that I have the best possible picture of the experiences of all our graduates.

Sincerely,

Wouda U. Smith

Wanda V. Smith, Professor and Head, Management Department APPENDIX J

FOLLOW-UP LETTER: GRADUATE GROUP

### Ferris State University Management Department

November 14, 1988

Jane M. Jones 123 East Oak Street Smalltown, MI 12345

Dear Jane:

Three weeks ago, you were sent a questionnaire that is part of a survey of all graduates of the finance program at Ferris State University during the academic years of 1983-84 through 1987-88. The purpose of the study is to provide information about the future direction and needs of the finance program. If you have already returned your completed questionnaire, please disregard this letter. As well, let me express my appreciation for your cooperation.

If you have not completed the questionnaire, may I urge you to do so. Your participation in the study is important; every single graduate has unique insight to share.

May I remind you that your individual responses will be kept confidential. The number on the questionnaire is being used solely to permit this followup. The results of the study will be published largely in the form of statistical reports.

Again, thank you for your cooperation. Please feel to contact me at the address or telephone number listed below if you have any questions.

Sincerely,

Mandurd. Anite

Wanda V. Smith, Professor and Head, Management Department

dlf

APPENDIX K

SURVEY COVER LETTER: EMPLOYER GROUP

November 1, 1988

Mr. Jordan H. Jones Jones & Jones, Inc. One First Avenue Westville, MI 98765

Dear Mr. Jones:

You responded to my letter dated October 10, 1988, that your organization employs graduates of four-year college or university programs in finance and that you were interested in participating in my survey. As I outlined in my first letter, your organization is one of a group of employers selected from Dun & Bradstreet's <u>Million Dollar Directory</u>. This study is being conducted as part of the requirements for my Ph.D. program at Michigan State University and with the sponsorship of Ferris State University.

I hope that you can take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope for the return of the questionnaire.

Your individual responses to the questionnaire will be kept confidential. The number on the questionnaire is being used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

Thank you for your participation in this survey. I am convinced that your participation will assist students as well as prospective employers such as your organization. If you have any questions about the survey or its purpose, please do not hesitate to contact me at the telephone number and address listed below.

Sincerely,

Manda V. Smith

Wanda V. Smith, Professor and Head, Management Department

dlf

November 1, 1988

Mr. James B. Jones XYZ Construction Company 2 North Front Street Southtown, MI 54321

Dear Mr. Jones:

You responded to my letter dated October 10, 1988, that although your organization does not employ graduates of four-year college or university programs in finance, you were nevertheless interested in participating in my survey. As I outlined in my first letter, your organization is one of a group of employers selected from Dun & Bradstreet's <u>Million Dollar Directory</u>. This study is being conducted as part of the requirements for my Ph.D. program at Michigan State University and with the sponsorship of Ferris State University.

I hope that you can take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope for the return of the questionnaire.

Your individual responses to the questionnaire will be kept confidential. The number on the questionnaire is being used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

Thank you for your participation in this survey. I am convinced that your participation will assist students as well as prospective employers such as your organization. If you have any questions about the survey or its purpose, please do not hesitate to contact me at the telephone number and address listed below.

Sincerely,

Wanda V. Smith

Wanda V. Smith, Professor and Head, Management Department

dlf

November 1, 1988

Mr. Jeffrey S. Jones Courtesy Wholesalers, Inc. 9876 West Highway One Northville, MI 45678

Dear Mr. Jones:

Mr. Anderson, President of your company, responded to an earlier letter from me that your organization employs graduates of four-year college or university programs in finance. He also indicated a willingness to participate in a survey that is being conducted as part of the requirements for my Ph.D. program at Michigan State University with the sponsorship of Ferris State University. Mr. Anderson indicated that you are the best person in your organization to provide information for the study.

I hope that you can take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope for the return of the questionnaire.

Your individual responses to the questionnaire will be kept confidential. The number on the questionnaire is being used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

Thank you for your participation in this survey. I am convinced that your participation will assist students as well as prospective employers such as your organization. If you have any questions about the survey or its purpose, please do not hesitate to contact me at the telephone number and address listed below.

Sincerely,

Mandu V. Smith

Wanda V. Smith, Professor and Head, Management Department

dlf

### Ferris State University Management Department

November 1, 1988

Mr. Jason F. Jones Advanced Automotive Company 1234 North Route 31 Eastville, MI 67890

Dear Mr. Jones:

Mr. Johnson, President of your company, responded to an earlier letter from me that your organization is willing to participate in a survey that I am conducting. He also indicated that you are the one best suited to respond to the survey. The survey is being conducted as part of the requirements for my Ph.D. program at Michigan State University with the sponsorship of Ferris State University. The survey is intended to provide information about the employers' expectations of graduates of four-year college or university programs in finance. The information collected in the survey will be used to make decisions about the future direction of the finance program at Ferris State University.

I hope that you can take a few minutes to complete the enclosed questionnaire and return it to me as soon as possible. For your convenience, I have provided a preaddressed, postage-paid envelope for the return of the questionnaire.

Your individual responses to the questionnaire will be kept confidential. The number on the questionnaire is being used solely to permit a followup. The results of the survey will be published largely in the form of statistical reports.

Thank you for your participation in this survey. I am convinced that your participation will assist students as well as prospective employers such as your organization. If you have any questions about the survey or its purpose, please do not hesitate to contact me at the telephone number and address listed below.

Sincerely,

Wanda V. Smith Wanda V. Smith, Professor and Bead, Management Department

dlf

APPENDIX L

POSTCARD REMINDER: EMPLOYER GROUP

Wanda V. Smith, Head Management Department Ferris State University Big Rapids, MI 49307

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America the Beautiful USA

Mr. John P. Jones ABC Hardware 123 North Main Street Bigtown, MI 23456

Dear Mr. Jones:

Have you completed and returned the brief questionnaire that asks about your experiences with and expectations of graduates of four-year programs in finance? If you have, thank you for your participation. If you have not, may I urge you to do so in order that I have the best possible picture of the experiences and expectations of the employers.

Sincerely,

Manda U. Snite

Wanda V. Smith, Professor and Head, Management Department APPENDIX M

FOLLOW-UP LETTER: EMPLOYER GROUP

#### Ferris State University Management Department

November 29, 1988

Mr. John P. Jones ABC Hardware 123 North Main Street Bigtown, MI 23456

Dear Mr. Jones:

Three weeks ago, you were sent a questionnaire that is part of a survey of selected employers in the state of Michigan. The questionnaire is directed toward your organization's experiences with and expectations of graduates of four-year programs in finance. If you have already returned your completed questionnaire, please disregard this letter. As well, let me express my appreciation for your cooperation.

If you have not completed the questionnaire, may I urge you to do so. Your participation in the study is important; every employer has unique insight to share.

May I remind you that your individual responses will be kept confidential. The number on the questionnaire is being used solely to permit this followup. The results of the study will be published largely in the form of statistical reports.

Again, thank you for your cooperation. Please feel to contact me at the address or telephone number listed below if you have any questions.

Sincerely,

Wanda V. Snith

Wanda V. Smith, Professor and Head, Management Department

dlf

APPENDIX N

DETAILS OF RESPONSES BY YEAR OF GRADUATION: GRADUATE GROUP

Year of Graduation	Number of Graduates	Number of Responses	Percent Returned
1983-84	14	4	28.6
1984-85	16	12	75.0
1985-86	23	16	69.6
1986-87	24	12	50.0
1987-88	25	16	64.0
Total	102	60	58.5

Responses by Year of Graduation: Graduate Group

APPENDIX O

NARRATIVE COMMENTS: EMPLOYER GROUP

Graduates must have good <u>common sense</u> in business matters and in dealing with people.

All the technical computer work that is done, such as spread analysis, database, etc., is not necessarily germane to a finance major. We have technicians who do that work, and the finance people only need to interpret the results. Accordingly, in answering your questions, if I was thinking of a finance major who did statement analysis, the answers would be completely different than I have given. However, thinking of a finance major as an executive trainee or management person, much technical knowledge of the computer is not necessary at all. Thus, it is very difficult to answer these questions accurately, not knowing to which particular function you are referring.

Typically, they lack people skills/organizational behavioral skills.

Quality varies from school to school. It is important that somehow the realities of life outside school be communicated to the student. Maybe they should know how to act and how to motivate themselves. Technical competence is usually not a problem--[not] understanding a problem and how to solve it does cause managers problems. Too often students seem to be micro-thinkers rather than a blend of macro/ micro types.

Although we expect our organization to grow in the next five years, we do not expect the financial staffs to grow. This is possible by realizing the productivity benefits of continuous improvement of automated financial systems (both PC and mainframe). These improvements include system enhancements, increased integration between systems, expanding use of EDI, technologic progress increasing speed and throughput, and the rapidly expanding computer literacy and competency of our financial staff.

A strong emphasis should also be placed on communication skills, both written and verbal. Public speaking would be a definite plus, along with a solid English and communication base.

It appears that students with co-op or intern experience are better employees overall. Turnover in our company has been limited in the recent past due to divestiture, reorganization, and subsequent sale to \_\_\_\_\_\_.

The basic understanding of <u>accounting</u> and finance is what we look for in new additions to staff. We use "outside" investment firms that work with our "investment committee" to do our <u>major financial</u> work. APPENDIX P

NARRATIVE COMMENTS: GRADUATE GROUP

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#### NARRATIVE COMMENTS: GRADUATE GROUP

The finance courses at Ferris give a good basic knowledge in the areas of finance. Currently, the introductory finance classes [in my graduate program] use the same financial management text that Ferris uses. Several cases from Business Policy have also shown up here. I wish I had more computer knowledge and also feel that I lack in my writing skills. The Survey of Systems class was a definite plus. There seems to be a major trend toward computer information systems. The knowledge is there [at Ferris] if the student chooses to learn it.

I relied heavily on the placement office to offer positions related to my major. It appears that most of the positions offered through the placement office are sales positions or restaurant management. If I wanted to pursue either of these, I would have [majored] in them. Maybe this will change as the school year progresses and more companies will offer positions better suited for what I trained for. The finance program I graduated from required one computer class. I might as well have not taken any. Every ad I see requires a working knowledge of Lotus 1-2-3, mainly spreadsheets. Why not offer a course dealing with spreadsheets only? I plan to take computer courses at a community college to make up for my lack of knowledge because it was not required to do so at Ferris.

The investment courses were the only time a finance instructor emphasized the use of a computer. All other finance instructors would rather discourage the use of a computer than support it. My professional training I feel may be limited because I had the same instructor for almost all of my advanced finance courses. This <u>did</u> <u>not</u> offer me a wide scope of alternative techniques or methods.

I apologize about the delay in returning the survey. My major was accounting/finance and I am employed as an internal auditor. I hope this information helps your analysis.

Much more computer application in financial subjects. <u>All</u> courses [in finance] should contain computer applications (at least some). Also, new and younger instructors are needed to appreciate the revolution of computers in finance. Thank you for the opportunity to be part of this survey.

Seniors in the finance program should be instructed as to the career areas in which to seek entry-level employment and what these entrylevel positions entail. As far as accounting is concerned, the program should focus more on understanding and interpreting financial information than preparing and compiling the information, which is an accountant's job. The advanced analytical finance courses were very poorly run. Realistic problems that one could expect to run into in business were seldom explored. I felt the text was outdated in 465 and 475.

You asked many computer application questions. I didn't understand why because I didn't receive that much computer training. Lotus is your right hand in the business world. I am an accountant and work on Lotus from 8 to 5. I also think that more accounting classes should be required. I don't feel this way because I am an accountant. It is because accounting and finance are very closely related.

I feel that there should be more required classes in spreadsheet applications. There was only one accounting class [and no other in my finance major] that even attempted to teach us about spreadsheets, etc. I feel the lack of this knowledge contributed to the lengthy job search I encountered.

D-P 205 was a waste of time, in my opinion. More word processing and spreadsheets are definitely necessary. The finance curriculum is <u>underpromoted</u>. It is an excellent and necessary area of study, and Ferris does nothing to increase enrollment. Many colleagues [with] different degrees now wish they would've taken more finance courses. FIN 454 was, by far, the most educating and interesting course in the entire finance core. This course would be excellent for nonmajors as well. Overall, I'm very glad I chose the finance curriculum over any other management degree.

We are approaching the 90's. Computers are here to stay. If Ferris wants to be known as having a "Class A" finance program, it <u>must</u> make better use of computers. Half of my financial analysis is done using Lotus 1-2-3. If it wasn't for D-P 205, I would have been totally lost. Also, without a working knowledge of computers, would <u>not</u> even interview you for a financial position. Ferris State should hire <u>only</u> instructors with some real-life work experience. Throw out the books and prepare the students for the real world. Communication and math skills are <u>very</u> important. How to win at office politics is also important.

Computer literacy played a major role in my being hired for my present position. Although I did receive a "bit" of exposure to spreadsheets and database work in my coursework, most of my training was acquired from my part-time job as a Student Supervisor for Central Stores at FSU. I have continued my computer education since graduation and have found it to be a valuable tool in both job enrichment and advancement. I think it is great that FSU is conducting this survey, and I feel additional exposure to computers in finance courses will make FSU finance graduates even more marketable to employers. I feel they could expand in the financial management class so that more time could be spent on the areas covered and more chapters in the financial management book could be taught.

The two-year transfer degree should have more emphasis on accounting. To move into finance and budgeting positions, most employers I interviewed with wanted an accountant or cost accountant background, not finance. The entry-level position for the career path was accounting. Note on questions 1, 2, and 3: I am currently at my second position, which requires extensive use of computers and spreadsheets. The first position was a sales job, which did not require any use of computers.

I feel that my technical training at FSU was very good. I am currently switching from a brokerage firm to a financial analyst position. I needed a strong accounting background, which I felt I received at FSU. The one thing I think would have helped greatly is thorough training in Lotus 1-2-3. Just as computers must be IBM-compatible, Lotus 1-2-3 is the industry standard.

I think it is really important to know Lotus 1-2-3. I feel it is also important to know how to do general ledger accounting with computers. A student needs to know how to post entries and close a business's books. Showing or demonstrating knowledge with confidence is very crucial when interviewing for positions.

Communication skills are very important. Stress more in the areas of communications, computers, and presentation skills.

I regret taking the finance program; it was nonspecific and left me without a tangible skill that I could sell to a prospective employer. I think the program should be scrapped or merged into another program.

I feel the program prepared me quite well for my previous position and it was very useful in my current position. I think the program lacks in its availability of internship options, and also placement opportunities [on-campus interviews] were <u>very</u> limited.

The finance program should be more specialized. Perhaps there should be two programs, one with emphasis on investments and the other with emphasis on corporate finance. I believe that computer classes would have been a waste of time for what I am doing now but may have been helpful for someone planning on a career in corporate finance. I would have liked to see more economics, investments, and tax-oriented classes for my career. Also, marketing classes would have helped considerably. Also, many of the management classes were a waste of time. I spent 18 months as a sales manager and these classes didn't help me at all. I found the education and training adequate. It did not overqualify me for several positions, and there were several times I found it was severely lacking.

More computer classes with applications would definitely help a junior or senior in interpreting and planning as well as organizing relative material. Either way, they [graduates] will be taught the importance of computers. I believe more economics and accounting should be implemented because these fields are also very critical.

I do not consider my time at FSU as "professional training." Because of the personnel and their attitudes, FSU was only a mediocre school. No more, no less.

I've just started going back to school to get my master's degree in finance. When I was in my undergraduate studies I had a hard time concentrating on what the class was all about, always wanting to know why I had to learn something I never thought would apply in the real world. Now, while I sit in my graduate classes, whatever the professor is explaining, I can now apply to something happening in the business world. I never took an internship while getting my undergraduate degree, and I wish now someone would have told me that it could be beneficial in my studies.

After graduation I was employed as an accountant at a local factory. I just switched jobs to my current position as a Registered Financial Representative. I am less than a month old at this new job. Ferris prepared me for both jobs quite well. I do wish I had more training in the sales area for my present position, though.

I graduated from FSU in 1984 with a B.S. in finance and a 3.4 GPA, thinking that my GPA would make me employable in the strong economy of 1984. However, on-campus recruiting that year was limited to two banks. Although the material covered in the FSU program was probably as good as any other Michigan school other than U of M, the business community at the time did not hold a Ferris degree in high regard. Based on what I saw in co-workers from other Michigan universities, the Ferris program was as strong as any other except for a slight shortage of computer skills (I only had to take an intro to computers course to get the degree). That should be expanded in the future to include at least a course on Lotus 1-2-3. Overall, the Ferris business program was very good, but it suffered from a poor marketing effort by the Placement Office.

Like any training, it's what you put into it. I felt that my training at Ferris overall was adequate.

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#### BIBLIOGRAPHY

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