Microcomputer Usage in Accounting Courses in Oklahoma Colleges and Universities

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The Edwin P. McCabe Honors Program

Senior Thesis

"Microcomputer Usage in Accounting Courses in Oklahoma Colleges and Universities"

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May 1993

Langston University
Langston, Oklahoma
MICROCOMPUTER USAGE IN ACCOUNTING
COURSES IN OKLAHOMA COLLEGES
AND UNIVERSITIES

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Submitted in partial fulfillment
of the requirements of the
E. P. McCabe Honors Program
May 1993

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ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to the faculty of the School of Business, whom I will always remember. Many thanks to Mrs. Cicely Smith, my committee chairman, Dr. Evelyn Weekes, Mr. James Wallace, and Mr. Curt Battles for all of the encouragement, advice, and support during the course of my thesis project. Also, I am most appreciative to my thesis committee members Dr. Alberta Mayberry, Director of Libraries, and Dr. Joy Flasch, Director of the Honors Program, for giving me inestimable time and professional wisdom.

I thank my parents for instilling in me the true sense of scholarship. I also thank Langston University and the E. P. McCabe Honors Program, for getting me where I am today. Last, but certainly not least, I thank God for giving me the strength, the courage, and the means to attend Langston University and to become a better individual.
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CHAPTER I

INTRODUCTION

Background of Study

Computers are a vital part of American society and promise to become even more widespread in the years ahead. The personal computer industry is booming, indicating that a great number of people are discovering the benefits of home computing.

The computer revolution that has occurred in recent years has significantly affected the accounting profession by making computer literacy an essential skill for accountants. Since computers are an integral tool of the environment in which the accountant operates, accounting academicians are aware of the need to train students so that they may compete in the accounting profession. Employers expect new accounting employees to have computer applications expertise. Computer training within the accounting curriculum of universities has proliferated in recent years to accommodate the need for additional computer proficiency for accounting employees. Academic administrators are aware of industry needs and constantly seek ways to train students in these skills. This challenge is being faced and
educational entities are moving closer to what they wish to accomplish in the accounting instruction area.

With all the emphasis on using computers in the classroom, many teachers feel as though, "come hell or high water," computers must be used. Others have avoided bringing computers through the classroom door by early retirement, the feigning of an unknown ailment, or saying, "I'll do it next year!" (Fordham 16).

Encouraged by the demands of employee accrediting agencies and professional societies for more computer-literate accounting professionals, many schools have made integrating computers throughout the accounting curriculum a goal. How long it will take to have the goal achieved depends a great deal on the commitment and pioneer spirit of the accounting faculty (Buttermilch 40).

**Statement of the Problem**

This study seeks to determine current microcomputer usage in higher education accounting classes in Oklahoma. Emphasis is placed on the types of microcomputers used in accounting courses, specific accounting courses in which microcomputers are used, and the types of software applications used.

Questions posed to faculty or administrators of college and university departments in which accounting programs/courses are offered include

1. Does your accounting department use microcomputers...
in conjunction with teaching accounting courses?

2. Does your institution have separate microcomputer facilities for business/accounting students?

3. What brand of personal computer/workstation is presently installed at your university?

4. To what degree are microcomputer/workstations presently being used in accounting courses?

5. If microcomputers/workstations are not being used, what are the reasons?

6. What are some specific accounting courses in which microcomputers/workstations are being used?

7. What are some specific applications of the microcomputers/workstations in current accounting courses?

Rationale for the Study

The literature is abundant with articles encouraging the use of microcomputers in accounting education and suggestions of ways of integrating computers in accounting; however, only a few articles address the use of computers in accounting education.

A study by Erika and Charles Boardman (1982) is limited to reporting the status of computer usage at two-year colleges in Principles of Accounting classes (Simmons 163). Another study reported by Doyle Z. Williams (1983) is
limited to the availability of computer facilities in accounting education and does not address the question of how and to what extent computer facilities are used (Simmons 163). A study by Kenneth Hiltebeitel and W. Ken Harmon (1984) considers only Pennsylvania two- and four-year institutions. It indicates that the majority of microcomputers in use at the schools surveyed were manufactured by Apple and that schools appear to be steering toward IBM for future purchases (20). The authors state,

Microcomputer use is emerging slowly in elementary accounting courses and will therefore emerge in a similar fashion in other courses. Without doubt, microcomputers are in education and will stay in education. In fact, as software develops and professors become more comfortable with the machines, microcomputer use will expand at a nearly geometric pace. (20)

Another study by Dennis and Karen Bialaszewski and Mehmet Kocakulah (1986) includes only American Assembly of Collegiate Schools of Business (AACSB) accredited institutions of higher learning. Janice and William Parmley conducted a comparison study (1987) to identify what university administrators were scheduling and what they were planning to incorporate in future accounting computer curricula. This study reveals that accounting educators are continuing to require more computer application requirements
in the accounting curriculum to better prepare accounting students for professional employment (90).

A study done by Susan A. Simmons and Sara A. Hart (1988) has the following limitations:

1. Only AACSB accredited colleges and universities are surveyed.

2. The assumption is made that responding and non-responding schools do not differ significantly in computer usage.

3. While the study provided individual universities with a basis for comparison of their computer applications with current "state of the art," it does not address the question of what "state of the art" should be. That is, the focus is on how computers are being used in the classroom rather than on how computers should be used in accounting courses. (163-164)

Today, many accounting students in some of the smaller Oklahoma colleges and universities feel that they will not be able to perform in the highly computerized offices in which they will seek employment. One student from Langston University stated, "I am really scared about going to work in a large corporation. I used the microcomputer more in my high school accounting course than I have used in all of my accounting courses in the four years I have been in college" (Personal Interview).
As a result of the insecurity felt by many Oklahoma students, educators as well as students need to know where higher education institutions in Oklahoma stand in relation to other colleges and universities in the United States in preparing accounting graduates for the demands of the workplace.

**Purpose of the Study**

This study was conducted to determine the following:

1. What types of microcomputers are used in accounting courses in Oklahoma colleges and universities?
2. In which accounting courses are the microcomputers being used?
3. What types of applications are used?

**Limitations**

This study is limited to two- and four-year colleges and universities in Oklahoma. There are forty-two institutions of higher learning in Oklahoma; information was secured from twenty-seven. Parameters of this study include use of the telephone survey method, a response rate of seventy-seven percent, a literature review reflective of the period 1983-1993, the methodology cited above, and the availability of information provided by persons in the accounting departments.

**Organization of the Study**

The introduction to the study, which includes a statement of the problem, research questions, rationale,
purpose, and limitations of the study, is presented in Chapter I. The pertinent literature on microcomputer usage in accounting courses is reviewed in Chapter II. The methodology is presented in Chapter III. Data are analyzed and findings discussed and presented in Chapter IV. The last chapter consists of the summary and conclusions.
CHAPTER II

REVIEW OF THE LITERATURE

Many articles have been published advocating the use of microcomputers in teaching accounting courses. The literature reveals that colleges and universities nationwide are setting up microcomputer labs in record numbers (Hiltebeitel 18).

Torrey Byles, author of "Academic Computing Comes of Age" (1989), writes,

Colleges and universities are creating a new identity. Amid the criticisms and complaints that our nation's "competitive base" is dropping in part due to the educational establishment not turning out the quality and quantity of personnel that America's economy needs, a new sense of zeal and purpose has crept into the halls of higher education. The excitement springs from the proliferation of small computers on campus, from classrooms to dorm rooms. (21)

The article goes on to state that many faculty members feel they are being left behind in the technological progress of the commercial world (22). Things change as
more universities acquire computers and network them on campus. "More non-engineers began learning about computers through word processing and started tinkering with integrating them into their curriculum," states Byles (22-23).


The mandate of college business educators is to prepare students for that segment of the business community they will enter upon completion of their areas of concentration. The mass marketing of microcomputers within the last few years offers a major challenge to the business educators. Within the next few years, every business, large or small, will have microcomputers at its disposal. Therefore all business college students must have working knowledge of the business application that will be performed on these computers. What better way of gaining this working knowledge is there than actually processing business transactions through these micros using commercially prepared software packages! The opportunity for hands-on experience using these software packages must be made available to the students as part of the business curriculum. (19)
Paul says that hands-on experience needs to be made available to students as part of the business curriculum and that if programs are not instituted for this purpose, the faculty will be preparing students for the past and not the future world in which they will be working (21).

Rita Buttermilch, author of "Using Computers in Accounting," (1991) comments that the challenge for accounting faculty is how to include computer applications in the accounting curriculum. She says that it individualizes learning, increases the depth of content, and better prepares students for the technological environment they will enter (39). Buttermilch concedes that faculty expertise, availability of hardware and software, support services, level of student expertise, and placement in the curriculum are all factors that should be considered when integrating computers into the accounting curriculum. She concludes by saying that many schools have made integrating computers throughout the accounting curriculum a goal because of the demands of employers of accrediting agencies and professional societies for more computer literate accounting professionals (40).

Computers are good at simulating real world situations so that students learn to understand a situation not only intellectually, but experientially (Talley 28). With this in mind, many professionals have set out to advise accounting educators of the importance of computer literate
accounting students.

A survey by Linvol Henry (1988) involving eighty-one students enrolled in four sections of Intermediate Accounting at California State University presents the students' perspectives on practice sets and their relative usefulness in accounting as well as their attitudes toward the use of practice sets in courses beyond the introductory course. Students were asked to indicate whether they had experienced a practice set in any of their courses and whether the practice sets were manual or computerized. The students then used selected criteria to rate the practice sets they had done and assessed their overall attitude toward these forms of learning experiences.

The results indicated that a majority of the students had done a practice set in the introductory and/or the first intermediate accounting courses. The students favored some type of practice set in each of the three courses and in other accounting courses as well. The preferences of students for manual versus computerized practice sets seemed to change beyond the first introductory course for which the students preferred a manual practice set. For the second introductory and the intermediate accounting courses, the students favored a computerized practice set (107).

A survey by Susan A. Simmons and Sara A. Hart involving 190 AACSB-accredited schools (1988) studies how many AACSB-accredited schools at the bachelor's and master's levels use
microcomputers in their accounting curriculum. A questionnaire designed to determine the nature and extent of computer usage in accounting courses at both the graduate and undergraduate levels includes several broad categories of questions (164).

The first section asks about university size, determines whether computer courses are used in accounting courses, and asks information on the number of mini/microcomputers and mainframe terminals available for student use. Section two asks respondents to indicate the courses in which computers are used. The third section concerns students' "hands on" experience with computers (164).

The survey of the American Assembly of Collegiate Schools of Business-accredited institutions reveals several of the following patterns of computer usage in accounting programs:

1. The current degree of computer integration into accounting courses by AACSB-accredited institutions is extremely high.

2. The average number of mainframe terminals and mini/microcomputers available for accounting education is expected to increase in the future with mini/microcomputers surpassing mainframe terminals.

3. The most popular brands of computers are IBM and Apple. In almost all cases, institutions own
the computer facilities and obtain educational software from commercial vendors.

4. The computer usage rate in individual courses is somewhat lower than the total percentage of computer users. However, for systems design and cost, more than half the institutions incorporated computers, indicating the popularity of computer applications for specific courses.

5. Unsupervised labs are the most popular setting for students to use computers.

6. The spreadsheet is prevalent in several accounting courses. Approximately half the institutions surveyed use it in cost, advanced accounting, auditing, systems design and graduate courses. Practice sets are used by at least half the sample for accounting principles and intermediate accounting.

7. The most important reason given for incorporating computers into accounting education is to facilitate learning of accounting concepts.

8. There is no significant relationship between university size or accounting department size and the use of computers in accounting education. (166-167)
Dennis Bialaszewski, Mehmet Kocakulah, and Karen Bialaszewski, authors of "Computer Usage in Accounting Curriculum: The State of Integration," (1986) conducted a study based on the question "Are accounting departments providing adequate exposure and training to their business students?" (31). Their study seeks to describe the extent of computer utilization in accounting curricula of AACSB-accredited institutions of higher learning. A questionnaire was developed and mailed to all 228 AACSB-accredited undergraduate schools. Information was requested on whether or not computers are employed in each of the various accounting course offerings, if the department has its own accounting microcomputer lab, whether it employs spreadsheets, types of computers used, whether accounting students are exposed to statistical packages, and frequency of the use of the various packages. Responses from 135 of the schools were used for the majority of the analysis.

The results of the survey show that the requirements in Computer Science and Management Information Science are good predictors of the number of courses schools are able to augment with experiential learning via the computer. The study also indicates that many schools are attempting to familiarize students with computerized accounting applications: "Schools which are not providing adequate computer-related training should be aware of the extent of integration that is taking place" (34).
Kenneth Hiltebeitel (1986) said that the use of microcomputers in accounting education has become more feasible in the last few years with the declining cost of microcomputers, the increased availability of educational software, and improved microcomputer skills of the accounting educator. He writes,

The most perplexing problem still facing the accounting educator is to determine how to best incorporate microcomputer concepts and usage into a curriculum that is already confronted with additional accounting, auditing, tax, and other requirements. (137)

The literature indicates most accounting educators would look favorably on microcomputer usage if it could be determined that utilization would not interfere with class time, if microcomputer utilization would improve the quality of accounting education, or if students express a desire to gain competence in microcomputer usage (137).

Janice and William Parmley conducted a comparative study of computerized applications in accounting in 1987. A population of 200 AACSB institutions was randomly selected from the total of 440. The major parts of the questionnaire include

1) accreditation of the institution by AACSB;
2) computer applications in accounting courses;
3) identification of the type of computer hardware
being used and the manufacturer;

4) a listing of specific accounting courses using computer applications and practice sets;

5) inquiry for future plans dealing with computer applications in the accounting curriculum;

6) an area that investigates the degree of satisfaction with hardware and software resources. (88)

The results of the survey reveal clearly that accounting educators are continuing to require more computer application requirements in the accounting curriculum to better prepare accounting students for professional employment. Computer requirements are being introduced in most undergraduate accounting courses. Institutions are also moving to increase computer assignments specifically in cost, systems, auditing, and tax courses (Parmley 90).

The purpose of a study conducted by Kenneth Hiltebeitel and W. Ken Harmon (1984) was to answer such questions as 1) which microcomputers schools are presently using; 2) how dependent certain courses are on microcomputers; and 3) some specific applications of microcomputers in the classroom through assessing microcomputer applications in elementary accounting courses (18).

The results of this study show that the majority of microcomputers in use at the schools surveyed were manufactured by Apple; however, schools appeared to be
leaning toward IBM for their future purchases. The greatest use of microcomputers was in general ledger applications. In two-year institutions no schools used the micros as an integral part of the courses and no schools planned to use them as an integral part. As far as four-year institutions were concerned, only a few had the microcomputers as a primary part of their courses while a larger percentage did not use microcomputers at all.

Gary E. Kundey (1991) summarizes his project about using general ledger software with practice sets in financial accounting courses in this way:

The application of computers in the management of financial accounting information has been a trend that has spawned dramatic changes in the way accounting is practiced. There has also been a corresponding trend to incorporate computers into the financial accounting curriculum. Should computers be a part of the principles of accounting course curriculum? If so, what form should the computer exposure take? What benefits can be expected? Findings of this experiment support use of traditional practice sets, in conjunction with simplified general ledger packages, in the principles courses. Such exercise contributes to students' perceived general knowledge of accounting as well as to their knowledge of specialized
accounting topics. The students' responses on perceived knowledge gained from the project were not statistically different according to difference in sex, age, major of the respondent, respondent's having had a prior computer class, or respondent's encountering problems with the project. The respondents overwhelmingly favor use of the computer in principles of accounting classes and believe that the project will benefit them in the future. (348)

Mary Monk, author of "How I Use Computers in...A Business Accounting Course," (1985) writes that she uses computers to grade her students' assignments that are completed on the computers (26). When the students are working with a diskette that has a faulty section, Monk has the students use one of the diskettes that is 100 percent correct. She states that this makes it easy to proceed with the rest of the simulation (26).

Kenneth M. Hiltebeitel (1986) states that one of the most discussed topics in accounting education in the last few years has been the integration of the microcomputer into the accounting curriculum (135). He feels that the most perplexing problem involving microcomputer integration has been the time constraints evidenced in the accounting curriculum (135):

The curriculum has been inundated with an expanded number of accounting, auditing, and tax topics. In
addition, there is the belief that accounting students need greater exposure to quantitative and statistical methods, computer languages, and various other new requirements. Adding microcomputer awareness and utilization has seemed to many as being a very worthwhile endeavor, but infeasible due to this time constraint. (135)

Hiltebeitel conducted a project with his introductory accounting students at Drexel University in 1985. The primary objectives of the project were to improve the understanding of the ten-column worksheet and to gain competence in using the Multiplan electronic spreadsheet program. He also wanted the students to gain a better understanding of the entire accounting cycle and gain an appreciation for the potential of the microcomputer in accounting (136). During the last week of the project, students were requested to write an evaluation of the microcomputer project.

The results of the project reveal that the students' understanding of accounting was enhanced by completing the program as was their ability to use the Multiplan spreadsheet programs, while few students suggested that introductory accounting was best learned manually and that it would be more appropriate to use microcomputers in later accounting courses (136).

Judith C. Simon (1987) states that standard accounting
practice sets can be adapted for use on a microcomputer:
The advantages of such a program are clear. Emphasis is placed on one aspect at a time--accounting principles first, microcomputer applications second. The microcomputer application can be adapted easily to the time available and the needs of the students. Students gain experience in using spreadsheets for completing accounting activities. Advantages and disadvantages of manual and electronic systems will be seen by the students. (179)

Accounting educators are constantly looking at ways to integrate microcomputers into the curriculum. Employers want accounting employees who have experience with microcomputers and accounting applications. The literature suggests that microcomputers are being used more and more by accounting educators to better prepare their students for the computerized world in which they will be working.
CHAPTER III

METHODOLOGY

Introduction

This study was developed and conducted to determine how many colleges and universities in Oklahoma use microcomputers in conjunction with their accounting courses. The extent of computer usage was based on primary data collected through a survey. A questionnaire modeled after studies by Kenneth M. Hiltebeitel and W. Ken Harmon (1984) and Susan A. Simmons and Sara A. Hart (1988) was developed. Telephone calls were made to thirty-five accounting departments in the state of Oklahoma to secure information on the extent of microcomputer usage in accounting courses. Information was secured from twenty-seven accounting departments.

Population

The survey includes forty-two colleges and universities. Seven of these schools do not teach accounting courses, which limits the population to thirty-five colleges and universities. Eight schools are not included in the survey because the appropriate officials were unavailable for questioning. The final population for the survey was twenty-seven institutions of higher learning as listed
below:

1. Bartlesville Wesleyan College
2. Cameron University
3. Carl Albert Junior College
4. Connors State College
5. East Central University
6. Eastern Oklahoma State College
7. El Reno Junior College
8. Langston University
9. Murray State College
10. Northeastern State University
11. Northwestern Oklahoma State University
12. Oklahoma Baptist University
13. Oklahoma City Community College
14. Oklahoma City University
15. Oklahoma Panhandle State University
16. Oklahoma State University
17. Phillips University
18. Seminole Junior College
19. Southeastern Oklahoma State University
20. Southern Nazarene University
21. Southwestern Oklahoma State University
22. Southwestern Oklahoma State University at Sayre
23. Tulsa Junior College - Metro Campus
24. University of Oklahoma
25. University of Science and Arts of Oklahoma
26. University of Tulsa
27. Western Oklahoma State University

**Questionnaire Design**

The questionnaire was designed to elicit special information about accounting and computers from the institutions surveyed. The first two questions ask if the accounting department uses microcomputers and if the institution has separate microcomputer facilities for business/accounting students. Questions three and four inquire about present and future installations of microcomputers in the labs. Questions five and six ask about current and future degrees of microcomputer usage in the accounting courses. Question seven is an open-ended question asking for a reason if computers are not being used. Eight and nine ask about current and future accounting courses in which the microcomputers are and will be used. The last two questions ask about current and future applications of computers in the accounting courses (see Appendix A for the questionnaire).

**Administration of the Instrument**

A list of all Oklahoma colleges and universities was obtained from *The College Blue Book: Narrative Descriptions* (555-565). Because of the lack of adequate mailing time and fear of insufficient response, the questionnaire was completed by securing information through telephone calls made to the accounting departments of the twenty-seven
colleges and universities included in the survey.
CHAPTER IV

PRESENTATION OF FINDINGS

This study seeks to determine the current state of microcomputer usage in accounting courses in institutions of higher learning in the state of Oklahoma. The literature reveals that microcomputers are being used more in present day accounting courses than in previous years. This chapter presents the findings of a telephone survey of accounting departments of the twenty-seven of forty-two Oklahoma colleges and universities conducted in the spring of 1993.

Microcomputer Usage in Accounting Courses

The survey reveals that many Oklahoma colleges and universities are using microcomputers. Of the twenty-seven colleges and universities surveyed, twenty-four use microcomputers in one or more accounting courses. Two- and four-year institutions use the microcomputers at about the same rate. Eighty-two percent of two-year institutions and ninety-four percent of the four-year institutions use microcomputers, while eighteen percent of the two-year colleges and six percent of the four-year do not use microcomputers. Eighty-nine percent of all colleges and universities surveyed use microcomputers in conjunction with
the accounting courses (see Table One). The main reason given by the University of Science and Arts of Oklahoma, Southwestern Oklahoma State University at Sayre, and Eastern Oklahoma State College for not using microcomputers was that there was just not enough class time to have the students use the computers. A professor from Eastern Oklahoma State College stated that there were not enough computers for the students to use, which is why micro-computers are not used at this institution. The majority of the professors who do not incorporate microcomputers in their courses feel that the students do not know enough about computers and that valuable class time is wasted trying to teach computer-illiterate students how to use the computers instead of trying to show the students how to use the particular software.

**Microcomputer Facilities**

Many institutions of higher learning in Oklahoma have microcomputer facilities for their business/accounting students. Of those surveyed, nineteen of the twenty-seven respondents have computer facilities. Forty-five percent of the two-year schools have separate facilities, while fifty-five percent do not have separate facilities. Of the four-year schools, eighty-eight percent have separate facilities and twelve percent do not. The total percentage of the schools that have separate microcomputer facilities is seventy (see Table Two). Some of the departments surveyed
stated that although they have no microcomputer facilities currently, they will be installing microcomputer labs in the future as soon as funds are available.

**Microcomputer Brands**

The two most popular brands of microcomputers currently used at the schools surveyed are IBM clones and IBM's. The clones represent forty-five percent of total installations, while IBM's represent thirty-five percent. Apple computer installations represent twelve percent and other installations compose eight percent. The responses to questions about the brands of microcomputers currently installed at the colleges and universities are presented in Table Three. When asked about future installations, many of the accounting departments said that they will be installing more IBM's through a grant from either the government or through use of school funds. The remaining departments stated that they will install the same brands they are currently using because of the cost involved with purchasing a large number of new microcomputers.

**Degree of Use**

Most of the departments surveyed stated that the microcomputers are being used as an integral part of one course or of the entire accounting curriculum. Seminole Junior College, Langston University, Oklahoma State University, and the University of Tulsa are a few of the eleven schools that reported using the microcomputers as an
TABLE THREE
MICROCOMPUTER FREQUENCY

TABLE FOUR
DEGREE OF USE IN COURSES

TABLE THREE
MICROCOMPUTER FREQUENCY

TABLE FOUR
DEGREE OF USE IN COURSES
integral part of one course or the whole accounting curriculum. Supplemental usage was reported by departments such as those at Carl Albert Junior College, Oklahoma City Community College, Tulsa Junior College, and Cameron University. Seven of the twenty-seven schools surveyed (Phillips University, Southern Nazarene University, University of Oklahoma, Northwestern Oklahoma State University, Oklahoma City University, East Central University, and Connors State College) reported using the computers occasionally. None of the departments reported using the microcomputers for remedial purposes. When asked about future usage, professors at schools like Murray State College and Western Oklahoma State College said they would like for the microcomputers to be used as an integral part of their curriculum if possible. Table Four presents the responses related to degree of use in the accounting courses.

**Course Usage**

The courses in which microcomputers are used most are Principles I (48%), Principles II (41%), Intermediate I (37%), and Accounting Information Systems (41%). The next level of courses using the microcomputers include Intermediate II (30%), Cost Accounting I (30%), Cost Accounting II (22%), Auditing I (26%), Advanced Accounting I (26%), Income Tax I (33%), and courses such as Integrated Accounting, which is offered at Murray State College (30%).
The courses in which microcomputers are rarely used are Auditing II (15%), Advanced Accounting II (11%), and Income Tax II (15%). A few of the schools that do use microcomputers in Auditing II are Oklahoma City University, East Central University, and Southwestern Oklahoma State University. The institutions that use microcomputers in Advanced Accounting II are Oklahoma Panhandle State University, Southern Nazarene University, and Oklahoma City University. Only four schools use microcomputers in Tax II. One professor surveyed stated that he wishes he could use the microcomputers for all of the accounting courses offered. Table Five presents the information relating to the accounting courses in which the microcomputers are used.

Microcomputer Applications

The most frequently used microcomputer applications are General Ledger with a fifty-two percent usage rate and applications such as Lotus and other types of spreadsheet packages with a forty-eight percent usage rate. Other applications are used by most of the institutions surveyed, with Financial Statement Analysis applications least used (three of twenty-seven schools). A professor at South-eastern Oklahoma State University stated that the applications used at that institution are the CD ROM Tax Register Series and the TurboTax software. Table Six shows the types of microcomputer applications used in the Oklahoma institutions of higher learning which were surveyed.
As the results of the questionnaire reveal, microcomputer usage is growing and will continue to grow in the state of Oklahoma. The literature suggests that microcomputer usage will increase in the years to come, and it is. This study shows that microcomputers are being used in most Oklahoma colleges and universities and that today's accounting students in Oklahoma are becoming better prepared for future careers as accountants.

This chapter presents the results of the survey and provides the answers to the three primary questions of the study.
CHAPTER V

SUMMARY AND CONCLUSIONS

Chapter One presented the background necessary to understand the study. It also included the research questions to which answers were sought. Chapter Two presented the pertinent literature on microcomputer usage in accounting courses. Chapter Three provided a description of the research methodology and the questionnaire used in the survey. Chapter Four was a presentation of the results obtained from a questionnaire on the use of microcomputers in accounting courses administered to accounting administrators and faculty in twenty-seven Oklahoma colleges and universities.

What types of microcomputers are being used in Oklahoma college and university accounting courses? IBM and IBM clones are the microcomputers being used most. Apple computers and other types of computers are slowly approaching the leaders. Many Oklahoma institutions will be purchasing more IBM microcomputers in the future so as to compete with other schools in providing the best education for accounting students.

In what accounting courses are microcomputers being
used? In the introductory accounting courses and the Accounting Information Systems course. Most of the departments that use microcomputers feel that in the future they will be using the microcomputers in more accounting courses and perhaps in all of the accounting courses they offer.

What types of applications are used? The most common type of application used with microcomputers in the accounting courses is the General Ledger package. Running a close second are other software packages that employ spreadsheets as a learning tool. Several other applications are used at a constant rate by the accounting departments.

Sue Talley ("Computers as a Teaching Tool" 1989) writes,

Futurists describe the 21st century workplace as a fluid environment where all effective workers will need to exercise higher-order thinking, creativity, flexibility, and good communication skills. In an economy marked by continual change and rapidly advancing technology, these thinking and problem-solving abilities, rather than any one set of occupational skills, will determine a person's success at finding and keeping a job. (28)

As vocational educators are well aware, this unfolding scenario forces a changed approach to education. John Sculley, chairman and CEO of Apple Computer in 1989,
describes the challenge this way:

It is no longer possible to think of education as simply the transfer of knowledge from teacher to student, pouring from one vessel into another. It is not as though we can give young people a ration of knowledge that they can nibble on throughout their careers. We don't even know what their careers will be. Students today cannot count on finding a smooth career path because, by the millions, the jobs that exist today will change radically tomorrow. To succeed individuals will need to have tremendous flexibility to be able to move from one company to another or from one industry to another. What tomorrow's student will need is not just mastery of subject matter, but mastery of learning (Talley 28).

More than any other area in business, the accounting profession has been affected significantly by the growing microcomputer technology. In business education the picture is no different. Accounting educators have assertively integrated the new technology into their classroom. Computer utilization is becoming more widespread with the declining cost of microcomputers, the increased availability of educational software, and the improved microcomputer skills of accounting educators. A computer for every accounting student is the dream of many accounting
educators, and in many instances, this dream may be a reality.

Like Drexel University, colleges and universities across the United States may soon adopt a mandatory microcomputer ownership requirement for incoming freshmen. This requirement would help the students gain a better understanding of the microcomputer more quickly than the average student, who waits to take an introductory microcomputer course at the appointed time in his/her course schedule. Even better would be a requirement mandating that students also purchase the appropriate software for the curriculum. Colleges and universities could assist students in the microcomputer ownership process by offering to give "scholarships" by way of the issuance of a microcomputer.

Oklahoma institutions of higher learning have come a long way in the area of microcomputer usage in the curriculum. To achieve the goal of preparing students with the knowledge and experience that their future employers will want them to possess, Oklahoma schools will have to go that "extra mile" for the students. Accounting departments should ensure that future entry-level accountants have the essential computer background. Not doing so will do an injustice to students.

Universities can use the survey results to compare their accounting programs with the current "state of the art" programs. Also, universities planning to install
microcomputer facilities in accounting education may want to base their decisions on the trend set by the majority of Oklahoma colleges and universities that are using microcomputers in accounting classes.
APPENDIX A

Questionnaire
Questionnaire.

School: ____________________________________________________________

1. Does your department use microcomputers/workstations in conjunction with accounting courses?  Yes/No
2. Does your institution have separate microcomputer facilities for business/accounting students?  Yes/No
3. What brand of personal computer/workstation is presently installed at your institution?  Apple__  IBM__
   Clones__  Mainframes__  Other__
4. What brand of personal computer/workstation will be purchased in the future?  Apple__  IBM__  Clones__
   Mainframes__  Other__
5. To what degree are microcomputers presently being used in accounting courses?  Integral Part of Course__
   Occasional__  Supplemental__  Remedial__  Not Used__
6. To what degree will microcomputers be used in future accounting courses?  Integral Part of Course__
   Occasional__  Supplemental__  Remedial__  Not Used__
7. If microcomputers are not being used, what are the reasons?  ____________________________________________
   ____________________________________________
8. What specific accounting courses are microcomputers/workstations used?  Prin. I__  Prin. II__  Inter. I__
   Inter. II__  AIS__  Cost I__  Cost II__  Auditing__
   Auditing II__  Advanced I__  Advanced II__  Tax I__
9. What specific accounting courses will microcomputers/workstations be sued in the future?  
Prin. I___  
Prin. II___  
Inter. I___  
Inter. II___  
AIS___  
Cost I___  
Cost II___  
Auditing___  
Auditing II___  
Advanced I___  
Advanced II___  
Tax I___  
Tax II___  
Oil & Gas___  
Other___

10. What are some specific applications of the microcomputer in current accounting courses?  
General Ledger___  
Accts. Rec.___  
Accts. Pay.___  
Report prep.___  
Inventory___  
Payroll___  
Deprec.___  
Cost Acct.___  
Taxes___  
Budgeting___  
Fin. Stmt.___  
Analysis___  
Other___

11. What applications will be used in accounting classes in the future?  
General Ledger___  
Accts. Rec.___  
Accts. Pay.___  
Report prep.___  
Inventory___  
Payroll___  
Deprec.___  
Cost Acct.___  
Taxes___  
Budgeting___  
Fin. Stmt. Analysis___  
Other___
APPENDIX B

List of Oklahoma Colleges and Universities
Bacone College  
Shawnee & York  
Muskogee, OK 74403  
(918) 683-4581

Bartlesville Wesleyan College  
2201 Silver Lake Road  
Bartlesville, OK 74006  
(918) 333-6151

Cameron University  
2800 West Gore Blvd.  
Lawton, OK 73505  
(405) 581-2230

Carl Albert Junior College  
Highway 271 South  
Poteau, OK 74953  
(918) 647-2124

University of Central Oklahoma  
Edmond, OK 73060  
(405) 341-2980

College of Osteopathic Medicine  
of Oklahoma State University  
1111 West 17th Street  
Tulsa, OK 74101  
(918) 582-1972

Connors State College  
Warner, OK 74469  
(918) 463-2931

East Central University  
Ada, OK 74820-6899  
(405) 332-8000

Eastern Oklahoma State College  
Wilburton, OK 74578  
(918) 465-2361

El Reno Junior College  
Box 370  
1300 South Country Club Road  
El Reno, OK 73036  
(405) 262-2552

Hillsdale Free Will Baptist College  
P. O. Box 7208  
Moore, OK 73153-1208  
(405) 794-6661

Langston University  
P. O. Box 838  
Langston, OK 73050  
(405) 455-2231

Mid-America Bible College  
3500 SW 119th Street  
Oklahoma City, OK 73170  
(405) 691-3800

Murray State College  
1100 S. Murray  
Tishomingo, OK 74360  
(405) 371-2371

Northeastern Oklahoma Agricultural and Mechanical Junior College  
Third and I.N.E.  
Miami, OK 74354  
(918) 542-8441

Northeastern State University  
Tahlequah, OK 74464  
(918) 456-5511

Northern Oklahoma College  
1220 East Grand  
Tonkawa, OK 74653  
(405) 628-2851

Northwestern Oklahoma State University  
Alva, OK 73717  
(405) 327-1700

Oklahoma Baptist University  
500 West University  
Shawnee, OK 74801  
(405) 275-2850
Oklahoma Christian College
Box 11000
2501 E. Memorial Road
Oklahoma City, OK 73136-1100
(405) 425-5000

Oklahoma City Community College
7777 South May
Oklahoma City, OK 73159
(405) 682-1161

Oklahoma City University
2501 N. Blackwelder
Oklahoma City, OK 73106
(405) 521-5000

Oklahoma Panhandle State University
Box 430
Goodwell, OK 73939
(405) 349-2611

Oklahoma State University
Stillwater, OK 74078
(405) 744-5000

Oklahoma State University Technical Institute-OKC
900 N. Portland
Oklahoma City, OK 73107
(405) 947-4421

Oral Roberts University
7777 South Lewis
Tulsa, OK 74171
(918) 495-6671

Phillips University
P. O. Box 248
Enid, OK 73701
(405) 237-4433

Rogers State College
College Hill Drive
Claremore, OK 74017
(918) 341-7510

Rose State College
6420 S. E. 15th
Midwest City, OK 73110
(405) 733-7637

Saint Gregory's College
1900 West MacArthur Drive
Shawnee, OK 74801
(405) 273-9870

Seminole Junior College
2701 State Street
Seminole, OK 74868
(405) 382-9950

Southeastern Oklahoma State University
Durant, OK 74701
(405) 924-0121

Southern Nazarene Univ.
6729 N.W. Expressway
Bethany, OK 73008
(405) 789-6400

Southwestern Oklahoma State University
100 Campus Drive
Weatherford, OK 73096
(405) 772-6611

Southwestern College of Christian Ministries
P. O. Box 340
Oklahoma City, OK 73008
(405) 879-7661

Southwestern Oklahoma State University at Sayre
409 East Mississippi
Sayre, OK 73662
(405) 928-5533

Tulsa Junior College-Metro Campus
909 South Boston
Tulsa, OK 74119
(918) 587-6561

University of Oklahoma
100 Asp Avenue
Norman, OK 73019
(405) 325-0311
University of Oklahoma
Health Sciences Center
P. O. Box 26901
Oklahoma City, OK 73190
(405) 271-2332

University of Science and
Arts of Oklahoma
17th and Grand
Chickasha, OK 73018
(405) 224-3140

University of Tulsa
600 South College Avenue
Tulsa, OK 74104
(918) 631-2307

Western Oklahoma State
University
2810 N. Main Street
Altus, OK 73521
(405) 477-2000
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Personal Interview with an Anonymous Langston University Student on the Use of Microcomputers in Accounting Courses. Langston, Oklahoma. 15 February 1993.


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