CURRENT USAGE OF MICROCOMPUTERS IN THE

OKLAHOMA PUBLIC SCHOOL CLASSROOM

AS PERCEIVED BY TEACHERS

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CHAPTER I

THE RESEARCH PROBLEM

Introduction

According to Papert (1980):

> We are at a point in the history of education when radical change is possible . . . and the possibility of that change is directly tied to the impact of the computer . . . Children can learn to use computers in a masterful way and learning to use computers can change the way they learn everything else (p. 8).

Evans (1982) states that:

> The flexibility of a modern computer, small or large, is to all intents and purposes infinite. The range of tasks it can perform is limited only by the range of programs which can be written for it ... One of the biggest untapped markets in the world is the application of computers to education ... For the first time, humanity may develop a true science of education and, with it, a real understanding of the nature of learning ... Teaching, as it is presently carried out, has changed very little in millennia, the only significant difference being the greater number of human brains that are subjected to the process. How will the teaching profession respond to the part-threat, part-challenge of the computer (p. 16)?

How has the teaching profession in the nation as a whole responded to this revolution in the field of education? According to a U. S. Department of Education (1981) survey of school districts conducted by the National Center for Education Statistics, about one-half of the nation's school districts provide students with access to at least one microcomputer or computer terminal.

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The National Education Association (1983), in its survey of NEA members, found instructional computers available in 80 percent of the nation's 2,000 largest, richest high schools--but in only 40 percent of the smallest, poorest ones.

Bitter (1980), in his survey of Arizona public school practices and needs for computer assisted instruction, concluded that most districts were implementing microcomputers on a pilot basis. They were finding full utilization of this new technology very difficult by virtue of the lack of trained personnel and the difficulty of obtaining effective software.

How has the teaching profession in the state of Oklahoma responded to the challenge of the microcomputer? Green and Roberts (1982) of the University of Oklahoma surveyed Oklahoma public school administators in the springs of both 1981 and 1982 and concluded that:

> In Oklahoma, the number of microcomputers in schools is increasing at such a rapid rate that it is difficult to measure numbers or to identify educational needs that have resulted from an abrupt influx of new technology into the school (p. 1).

Need for the Study

There is a lack of knowledge about the classroom teacher's attitude toward and experience with microcomputers. All the surveys mentioned, with the exception of the NEA survey, have questioned the administrators, not the teachers. In order to plan the implementation of microcomputers in the classroom, the classroom teacher's position needs to be documented and analyzed.

Statement of the Problem

Oklahoma school administrators and teacher educators do not have a data base describing teachers' attitudes toward and/or experience with the instructional use of microcomputers. The purpose of this descriptive study was to establish such a data base. With this in mind, the following research questions were postulated:

Research Questions

Question One: What are the extent and nature of microcomputer use by the sampling of Oklahoma classroom teachers?

Question Two: What is the perception of the sampling of Oklahoma classroom teachers of the advantages and disadvantages of using the microcomputer in the classroom?

Question Three: What is the perception of the sampling of Oklahoma classroom teachers of their administrators' attitude toward microcomputer utlilization in the classroom?

Question Four: What is the interest of the sampling of Oklahoma classroom teachers in possible future use of the microcomputer in their teaching?

Question Five: What are the needs perceived by the teachers in the sampling for the implementation of microcomputers in their classrooms in the future?

Significance of the Study

The results of this study present a profile of current teachers' practices and attitudes toward instructional use of the

microcomputer. From these results future utilization can be planned with the teachers' wants and needs in mind.

In the final analysis, the classroom teacher implements any innovation in the classroom. Often, the impetus for such innovations comes from informed educators who are willing to try a new approach to instruction in their own classrooms. Working with their administrators, they are the ones who can bring about change and improvement in the educational process.

In order to take advantage of the ground-swell of interest in having microcomputers in the classroom, the classroom teachers' willingness to change and adapt must be demonstrated. If such adaptability and willingness are present, they should be indicated by the results of this study. Such adaptability should serve to increase the utilization of microcomputers in classroom instruction in Oklahoma and should serve as an indication of the type of instruction which needs to be offered to both teachers and students.

Limitations of the Study

Certain limitations inherent in the study were:

1. The use of a questionnaire as a source of data. The validity of the responses depended upon the willingness of the respondents to cooperate, their honesty in answering, and the motivating interest of the respondents.

2. The relative scarcity of microcomputers in Oklahoma classrooms. Not many teachers in a sampling of the population as a whole would have actual experience in teaching with a microcomputer.

3. The rapidly changing use of classroom microcomputers in Oklahoma. The study shows the state-of-the-art at the beginning of the 1982-83 school year. A later study may well show a great increase in the numbers of microcomputers being used by classroom teachers in Oklahoma.

Assumptions

When a descriptive study of this type is undertaken, there are certain assumptions that must be made. It was assumed that:

1. Persons responding to the survey questionnaire were representative of the teacher population of Oklahoma.

2. Oklahoma teachers who were not actually teaching with microcomputers had had enough exposure to them that they had formed opinions as to the desirability or nondesirability of their use in the classroom.

3. Users and nonusers alike would be able to analyze objectively their position and needs on the subject of instructional use of microcomputers and to respond to the questionnaire.

Definition of Terms

A _microcomputer_ can be defined as a general purpose computer that is small, not very expensive, and easy to use. Most have from 16K to 64K of _RAM_ or random access memory. This means they can store from 16,000 to 64,000 letters in their random access memory. Most can accept additional memory. A microcomputer can drill, tutor, simulate, solve problems, provide information and play games.

<u>Computer Assisted Instruction</u> (CAI) is one of two ways a computer can be used in the classroom. It can be used for motivation, self-pacing, diagnosis, immediate feedback, for recording achievement gains and for presenting material in a consistent manner to a variety of pupils. Using CAI, the teacher's role shifts to that of creator, implementor and developer of material and counselor.

<u>Computer Managed Instruction</u> (CMI) is the second way a computer can be used in the classroom. It can be used by teachers and administrators in testing, individualized diagnosis and prescription, record keeping, scheduling, and in time and resource management. Computer Managed Instruction provides students with immediate feedback to monitor their progress daily. The microcomputer can figure test results, prescribe a program, predict a completion time and tailor practice based on individual performance.

A <u>mainframe</u> or large computer has the ability to handle huge data banks. A smaller computer connected to the large mainframe is called a <u>computer terminal.</u> In this instance, the computer becomes an available resource through which the user can use all the data stored in the large mainframe computer.

Summary

In education, as in every other field in modern life, the computer revolution is here NOW. Evans (1979) noted:

If the efficiency and cheapness of the car had improved at the same rate as the computer's over the last two decades, a Rolls Royce today would cost about $3, would get 3 million miles to the gallon, and would deliver enough power to drive the QE2. (p. 30)

Molnar (1981, p. 1.4) states: "In the future, a lack of knowledge of computers will make people as functionally illiterate as the inability to read, write or do arithmetic is today".

The National Commission on Excellence in Education (1983) recommends that all students seeking a high school diploma be required to take one-half year of computer science. They considered the study of computer science to be one of the "new basics".

If educators are to respond intelligently to the "part-threat, part-challenge" of the computer and bring about the "radical change in education" Papert (1980, p.8) says is possible in a positive manner, educators need to have all the data necessary to plan for efficient, orderly progress in the future.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Because microcomputers were introduced into classrooms so recently, very little actual research in the field has been reported. A study sponsored by the U. S. Department of Health, Education and Welfare (1981) and conducted by the Children's Electronic Laboratory investigated three school systems. In these school systems they studied the students, administrators, community and technology specialists and concluded that:

> School systems tend to adapt microcomputer use to their own goals, needs and ways of operating . . . Microcomputers on their own will not promote any particular outcomes, and their impact will depend largely on the educational context in which they are embedded (p. 20).

They also commented on the "paucity of research literature on the educational and developmental consequences for children using the microcomputer" (p.21).

Literature on Children Using

the Microcomputer

What can be found in the literature about the educational and developmental consequences for children using the microcomputer? Cox and Berger (1981) and Kerr (1973) studied the profiles of

successful computer students. They found such learners to be bright, often boys, math and science oriented, logical or analytical thinkers and persevering. Cox and Berger also found that low and high achievers alike learned to approach problems with skill and confidence.

One of the most important findings was that of Jelden (1980). He found that the incidence of Computer Assisted Instruction (CAI) correlated positively with student grades.

<div align="center">

Literature on Teachers' and

Administrators' Use of

The Microcomputer

</div>

Some studies can be found on the effects of the introduction of microcomputers into the classroom on teachers and administrators. Naiman (1982) describes a feasibility study which investigated the effects of introducing microcomputers in primary school classrooms with women teachers who had no previous experience with their use. She wrote that microcomputers bridge the traditional world defined for women and the male dominated world of technology. She concluded that the use of microcomputers by females helps lessen their fears of technology and that microcomputers can be a beginning, supportive step into this technological world.

Dershimer (1980) conducted a study to identify the charactertistics of teachers willing to implement computer-based instruction in the classroom. Baylor (1978), studied the influence of an introductory microcomputer course on educators' attitudes toward computers. Romstadt (1980) investigated the impact of

microcomputer managed instruction (CMI) on satisfying the instructional management needs of teachers. In all three studies, the researchers noted that the use of microcomputers in the classroom increased the efficiency of instruction and learning, reduced administrative and clerical tasks, and facilitated drill and/or tutorial sessions for students.

Teachers are understandably fearful and reluctant to accept new technology (Spuck and Owen, 1976). Researchers in Computer Assisted Instruction (CAI) have called this fear of change brought about by machines the "John Henry Effect" (Winkle and Mathews, 1982). Administrators need to know more about computers to help their faculties overcome their missapprehensions (Sharry, 1975). This failure to use new technologies in general has been traced to the following facts: often there is little concrete evidence of the effectiveness of the use of the technology; teachers resist change; there is lack of training in the use of the equipment; adequate hardware, software and courseware are lacking; teaching style needs to be changed to use the new technology; and extra time and preparation are required to use new technologies (Lidtke, 1981).

Administrators object to computers for two basic reasons: refusal to face the problems of computer use and refusal to pay for computers. Better understanding of what the computer can do helps solve these problems (Floyd, 1972).

Computer-based instruction is not a threat to humanization and it can provide opportunities for increasing effectiveness and personalization of the instructor-student relationship (King, 1975) Smeltzer (1981) found positive attitudes of media specialists toward

the role of the computer and Vensel (1981) found that preservice special education teachers not generally favorable to the prospect of computers in the classroom showed a large shift in their attitudes toward the positive after a demonstration of a microcomputer system.

Some of the problems generated by computers in the classroom are impersonal feelings, high cost, need to tailor-make the system for each local area and negative attitudes of teachers toward such technology in education (Wightman, 1980). Bozeman (1978) found that a significant portion of the wide variance in the success of the implementation of the microcomputer for instructional management was attributable to the psychological type of the user. Miller (1982) found microcomputers successful in generating enthusiasm among teachers, parents, and the community. Kerr (1973) found that the difference between success and failure lies in humanizing computer managed instruction.

Ultimately, as Townsend's (1981) study showed, faculty, students, and administrators will have to work together toward the establishment of the computer in the classroom.

<div align="center">Literature on Surveys of Microcomputer

Use in the Classroom</div>

In 1981 the National Center for Education Statistics, U. S. Department of Education, surveyed 579 school districts, representing the 15,834 districts in the nation. A response rate of 97 percent was achieved. They found that about one-half of the nation's school districts provided students with access to at least one

microcomputer or computer terminal. Microcomputers outnumbered terminals connected to large mainframe computers, proportionately, three to two, in these districts. Three-fourths of the available microcomputers were used at the secondary school level. Approximately one out of every four public schools had at least one microcomputer or computer terminal for instructional use by students. This represented one-half of all secondary schools, 14 percent of all elementary schools, and 19 percent of all other types of schools. The most frequently reported educational use was to provide students with an understanding of computer concepts, or computer literacy. Other major uses were to improve student learning in selected subject areas and to challenge high achievers. Fewer than half of the districts with computers used them for remedial or compensatory education. Most districts relied on their computers for more than one of these educational purposes.

According to the National Education Association's Teacher Survey (1983), seventy percent of the teachers who reported computers' effects on students said the machines improve interest, motivation, attention span, self-confidence, and cognitive learning. Half the teachers surveyed said computer learning would become common and be considered basic in the future. Eighty-three percent of the teachers surveyed wanted a course in instructional computer use. Rich districts have more computers than poor ones. Instructional computers were available in 80 percent of the nation's 2,000 largest, richest high schools--but in only 40 percent of the smallest, poorest ones. This correlation holds at the junior high and elementary levels as well.

The U. S. Department of Education's (1983) National Commission on Excellence in Education's Report "A Nation At Risk: The Imperative For Educational Reform" recommends that state and local high school graduation requirements be strengthened to include one-half year of computer science for all graduates. The report considers computer science one of the "new basics" and comments:

> The teaching of computer science in high school should equip graduates to: (a) understand the computer as an information, computation, and communication device; (b) use the computer in the study of the other basics and for personal and work-related purposes; and (c) understand the world of computers, electronics, and related technologies (p. 19).

In the springs of both 1981 and 1982, Green and Roberts (1982) surveyed the administrators of a sampling of Oklahoma school systems and found that:

> It is clear that the microcomputer is finding its way into the majority of schools in Oklahoma, with most schools choosing the Radio Shack TRS-80 or the Apple. The most common areas of instruction where microcomputers are used are math, science and business. However, there is a great interest shown by educators in other fields also. Educators feel a very significant need for more personal training in computer usage, ideas for methods, good material and time to develop this new concept (p. 2).

Summary

Forman (1982), in her search of the literature, concluded that:

> Researchers are generally optimistic about the future of the computer in education. They feel that the hardware problems are being dealt with and that future advances in technology can only result in the 'Educator's Dream Machine.' However, it is also generally accepted that the problem of ensuring an adequate supply of quality courseware and of training teachers how to use the computer in an effective manner will continue to impede the widespread integration of computer technology into the school system. It is also generally accepted that solving these problems is going to be expensive . . . The

resources of institutions, schools and ministries should
concentrate their efforts on areas where Computer Assisted
Instruction (CAI) has proven itself to be both effective
and cost effective..CAI must be given time to evolve while
courseware builds up and irrational fears of computers are
overcome. In this way . . . computers should naturally
find their place in the educational system (p. 49).

CHAPTER III

METHOD AND PROCEDURE

Introduction

In order to assess the Oklahoma classroom teachers' response to the increasing use of the microcomputer in the classroom, a questionnaire was designed which would indicate their present usage of the microcomputer, their perception of the advantages and disadvantages of classroom computer use, and their personal data. Since the sample was state-wide, the questionnaires were sent through the mail.

A questionnaire permits a wide coverage with the least outlay of money and effort. Replies to a questionnaire may be more objective and accurate than those to other survey techniques. If the respondents are permitted to remain anonymous, many times the answers will be more candid and objective than they would be if the respondents were required to identify themselves. The advantages of a questionnaire as opposed to an interview are that the questionnaire permits the respondent to consider the responses longer and gives him a chance to check the information he gives. However, a questionnaire does not permit the investigator to note the reluctance or evasiveness of the respondent. Also, the investigator cannot follow through on misunderstood questions.

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Unreturned questionnaires decrease the size of the sample on which the results are based.

Population

The population selected consisted of all certified active Oklahoma public school classroom teachers from kindergarten through twelfth grade who were teaching at the end of the 198i-82 school year.

Sample

The population of all 34,491 Oklahoma classroom teachers in 617 school districts at the end of the 1981-82 school year was sampled by the Oklahoma Education Association. Every fiftieth name from its list of all active classroom teachers, not just those who were OEA members, was supplied to the researcher. This yielded a systematic sampling from a population list with no known biases. The respondents who reported that they had retired or moved before the start of the 1982-83 school year were deleted from the sample.

Instrumentation

The questionnaire (Appendix B) was designed to determine the respondents' use of and/or interest in using microcomputers in classroom instruction. It was revised and refined through recommendations from members of the researcher's doctoral committee and through recommendations obtained from a pilot study. The pilot study was conducted with the assistance of a graduate class in supervision. The revisions suggested by both the committee and the class were included in the design of the questionnaire.

The questionnaire was organized and printed in a four page foldout. The three leading questions were:

1. Have you utilized microcomputers in instruction in the past?

2. Do you currently utilize microcomputers in your classroom?

3. Do you plan to utilize microcomputers in your classroom instruction in the future?

Those who responded affirmatively to questions one and/or two were then asked to specify what kind of equipment they had, how they financed the purchases, and how they utilized the equipment in the classroom.

Those who responded negatively to questions one and/or two were asked these questions:

12. If you are not presently using microcomputers in your instruction, would you be interested in obtaining them?

13. Has your administrator been receptive to starting a program using microcomputers in classroom instruction?

14. Would you be interested in taking initial or further training in the use of microcomputers in the classroom?

15. Are microcomputers being used for instruction anywhere in your school system, or are they planned for next year?

All respondents were asked their perceptions of the advantages and disadvantages of microcomputer use in the classroom. Personal data such as subject taught, grade level taught, number of students taught and years experience in teaching were requested.

Demographic data were obtained by asking the respondents to name their school districts. The districts were then classified as

small, medium, or large by locating them on an Oklahoma State Department of Education list. The list ranked all 617 Oklahoma School Districts by average daily attendance (ADA) in the 1980-81 school year. Small districts were defined by the researcher as those having less than 250 average daily attendance. Medium districts were defined as those having from 250 to 1000 ADA. Large districts were defined as those having over 1000 ADA.

Since it was a blind study, no names were put on the questionnaires. The questionnaires were returned to the Oklahoma Public School Research Council in an envelope requiring no return address. The respondents were also given an addressed post card on which to send in his or her name and address. This card had a blank to check if he or she desired a summary of the results. Seventy percent of the respondents asked for a copy of the summary.

Data Collection

The first mailing of 595 questionnaires was sent to the teachers' homes, timed to arrive shortly before the start of the 1982-83 school year. The cover letter (Appendix A) indicated that the study was under the auspices of the Oklahoma Public School Research Council. The questionnaires and postcards were returned separately to the Council's office at an affiliated university, Oklahoma State University. One month after the initial mailing a second mailing was sent out with a new cover letter (Appendix A). Three hundred forty-six questionnaires were received--a response rate of 58.5 percent.

Analaysis of Data

The data from these questionnaires were coded and punched on data cards and scoring was completed by computer, using the Statistical Analysis System (SAS) at the Oklahoma State University Computer Center. The data analysis involved the use of descriptive statistical tools. Frequency distributions were established for the purpose of supplying an actual count and percent of occurrence for each classification requested.

Analysis of Data from Respondents
Using Microcomputers

From the information supplied by the repondents using microcomputers, tables were compiled for the review of frequencies for these categories:

1. Course taught by grade level (item 5).

2 Course taught by number of students (item 5).

3 Location of computer (item 4).

4. Source and kind of funds to buy equipment (item 8).

5. Instruction taken in operating microcomputers (item 9).

Analysis of Data from Respondents
Not Using Microcomputers

From the information supplied by the respondents not using microcomputers, tables were compiled for the review of frequencies in these categories:

1. Those interested in using micrcomputers in the classroom (item 12).

2.   Those interested in taking training in microcomputer use (item 14).

3.   Perception of Administrator's interest in instructional use of microcomputers (item 13).

4.   Instructional use of microcomputers anywhere in their school system (item 15).

Analysis of Data from all Respondents

From the information supplied by all respondents, tables were compiled for review of frequencies in these categories:

1.   Perceptions of advantages of using microcomputers in classroom instruction (item 16).

2.   Perceptions of disadvantages of using microcomputers in classroom instruction (item 17).

3.   Administrative use of the microcomputer in their school system (item 18).

4.   Personal data – subject taught, grade level, number of students, years of teaching (item 19).

Demographic Information

Tables, maps, or charts were compiled for the review of frequencies involving the following classifications or categories of demographic data:

1.   Responses by county (item 19).

2.   Number of teachers per county.

3. Responses of those having microcomputers by county (item 19).

4. Responses by size of school district (item 19).

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purpose of this chapter is to report the data gathered from the questionnaires mailed to a sampling of every fiftieth Oklahoma classroom teacher. The purpose of the instrument was to establish a data base for future planning by ascertaining teachers' use of and/or interest in using the microcomputer in classroom instruction.

The questionnaires returned after the initial mailing amounted to 236 or 40 percent of the 591 teachers contacted. The returns from the follow-up mailing resulted in an additional 109 returns or another 18.5 percent. The total number of questionnares returned was 346 or 58.5 percent. Not all respondents answered all questions and therefore the number of answers reported to the various questions varies.

This chapter is devoted to the analysis of data collected. The first section will present a description of the subjects. Demographic data will be assessed for the purpose of accurately describing the sample used in the study.

The second section will analyze the research questions presented in Chapter I. Frequency tables (percents) will be examined for the purpose of analyzing the respondents who reported that they were currently using microcomputers. Tables will be presented

listing the nonusing teachers' reporting of microcomputer use anywhere in their school systems. Tables will also be used to compare and contrast all respondents' perception of the advantages and disadvantages of microcomputer use in the classroom. Tables will also be used to present the administrators' use of the microcomputer for administrative purposes as reported by the teachers, and the teachers' perception of their administrators' attitude toward microcomputer use in the classroom. Frequency tables comparing and contrasting respondents' interest in possible future use of the microcomputer and their perceptions of their needs for this implementation will also be presented.

Description of Subjects

Teachers of all grade levels and all subjects were represented in the sample. Table I is a list of the grade distribution of all respondents teaching elementary school - kindergarten through sixth grade.

It should be noted that the total number of respondents shown is higher than the actual number of questionnaires received because many teachers have more than one assignment. This accounts for the disproportionately high number of kindergarten teachers. The actual number of teachers would be half the number of classes reported because such instructors usually schedule two half-day sessions.

Table II is a list of the distribution of all respondents by assignment in middle schools.

TABLE I

DISTRIBUTION OF ALL RESPONDENTS TEACHING
IN ELEMENTARY SCHOOLS BY ASSIGNMENT

Grade or Assignment	Frequency	Percent
Kindergarten	190	40.5
Fourth Grade	40	8.5
First Grade	34	7.2
Fifth Grade	30	6.4
Second Grade	29	6.1
Third Grade	29	6.1
Sixth Grade	29	5.9
Special Education	13	2.7
Learning Disabilities	11	2.3
Other	64	14.3
TOTAL	468	100.0

The total number of respondents is larger than the number of questionnaires received because some teachers teach in more than one area.

Table III is a list of the distribution of all respondents by high school subject taught.

TABLE II

DISTRIBUTION OF ALL RESPONDENTS TEACHING
IN MIDDLE SCHOOLS BY ASSIGNMENT

Subject or Assignment	Frequency	Percent
Seventh Grade	152	36.7
Eighth Grade	53	12.8
Ninth Grade	27	6.5
Math	25	6.0
Sixth Grade	24	5.7
Language Arts	16	3.8
Gifted/Talented	15	3.6
Social Studies	14	3.3
Other	88	11.6
TOTAL	414	100.0

Again it should be noted that the band teachers are reporting
at least two sections each so the actual number of band teachers
would be half the number of sections reported.

Table IV is a list of the years taught by all respondents at
all grade levels.

This information was lacking on a few of the questionnaires so
the total number of respondents is less than the actual number of

questionnaires received. Table V is a list of the distribution of all respondents by class size.

TABLE III

DISTRIBUTION OF ALL RESPONDENTS TEACHING
IN HIGH SCHOOLS BY SUBJECT TAUGHT

Subject	Frequency	Percent
Band	90	40.3
English	17	7.0
Business	10	4.4
Biology	9	4.0
Home Economics	8	3.5
Math	8	3.5
Chemistry	7	3.1
Computer Literacy	7	3.1
Science	6	2.6
Social Studies	5	2.2
Physical Science	4	1.7
Speech/Drama	4	1.7
Art	3	1.3
Journalism	3	1.3
Other	42	21.3
TOTAL	223	100.0

Again, not all respondents completed this section so the total number of responses is less than the number of questionnaires received.

TABLE IV

DISTRIBUTION OF ALL RESPONDENTS BY
TEACHING EXPERIENCE

Years Taught	Frequency	Percent
0- 4	8	19.4
5-10	62	27.9
11-15	89	24.2
16-20	77	15.0
21-25	12	3.8
25 and up	31	9.7
TOTAL	319	100.0

Demographic Data

All but ten of the seventy-seven counties in Oklahoma were represented in the sample, as indicated in Table VI which lists the responses by counties. Also, Figure 1 illustrates the frequency of responses by counties on the state map.

TABLE V

DISTRIBUTION OF ALL RESPONDENTS BY CLASS SIZE

Number of Students Taught	Frequency	Percent
1- 10	4	1.3
11- 20	30	10.1
21- 30	87	29.2
31- 40	11	3.7
41- 50	11	3.7
51- 60	13	4.4
61- 70	5	1.7
71- 80	9	3.0
81- 90	3	1.0
91-100	19	6.4
101-110	8	2.7
111-120	17	5.7
121-130	11	3.7
131-140	4	1.3
141-150	15	5.1
150 +	50	16.8
TOTAL	297	100.0

TABLE VI

RESPONSES BY COUNTIES

County	Frequency	Percent
Tulsa	42	13.1
Oklahoma	37	11.4
Cleveland	18	5.5
Canadian	13	4.1
Comanche	10	3.1
Pottawatomie	9	2.8
Washington	8	2.5
Garfield	7	2.2
LeFlore	7	2.2
Payne	7	2.2
Rogers	7	2.2
Custer	6	1.9
Kay	6	1.9
Marshall	6	1.9
Carter	5	1.6
Garvin	5	1.6
McIntosh	5	1.6
Ottawa	5	1.6
Less than 5 per county	119	36.6
TOTAL	322	100.0

NUMBER OF RESPONSES

COUNT
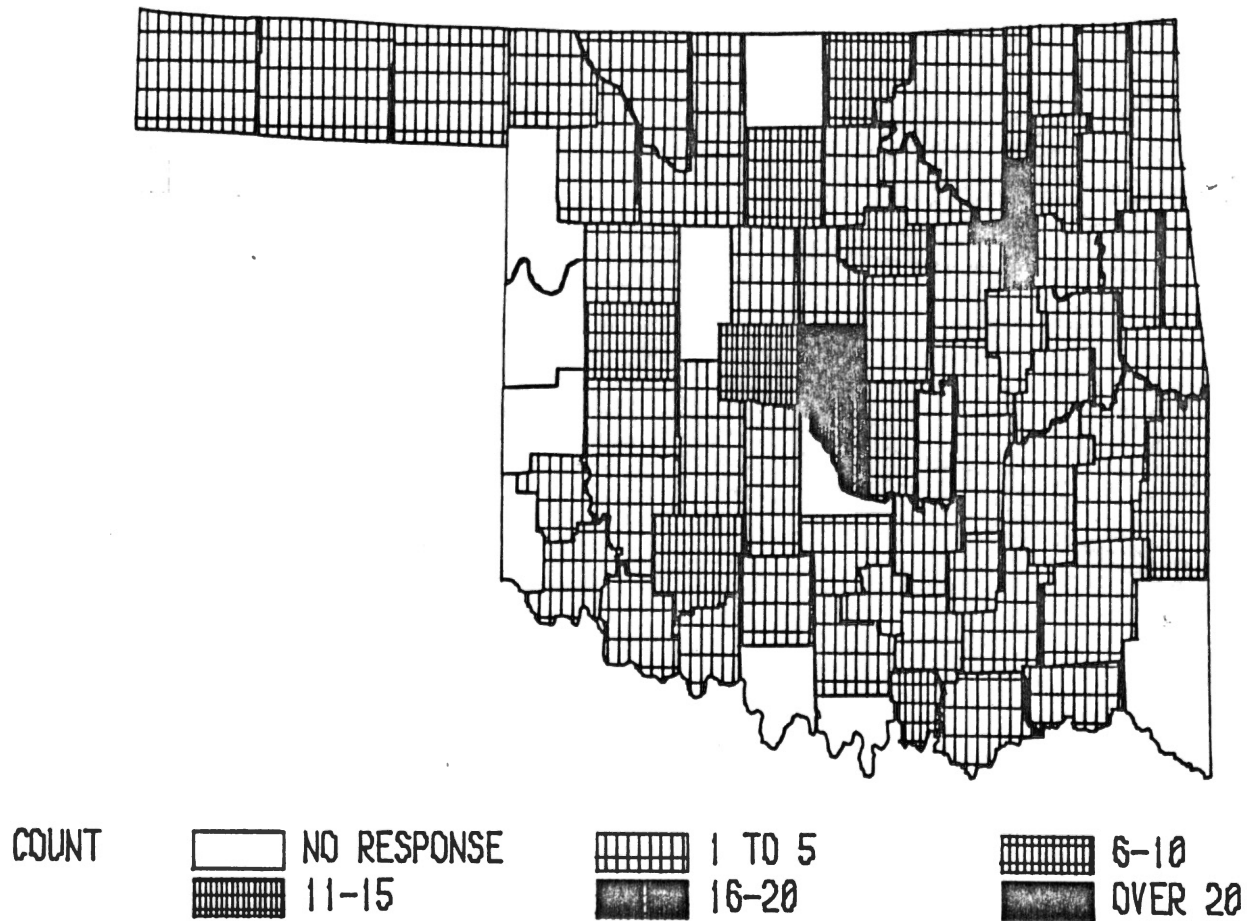☐ NO RESPONSE   ▦ 1 TO 5   ▦ 6-10
▦ 11-15   ▦ 16-20   ▦ OVER 20

Figure 1.   Frequency of Responses by County

The number of teachers per county in the entire population is illustrated in Figure 2. The number of teachers per county in the entire population was compared with the number of teachers per county in the sample using percent. The chi square value for this calculation was 25.76 with 76 degrees of freedom, showing no significant differences between the population and the sample.

Distribution of school size in the sample closely paralleled that of the entire state, as indicated in Table VII and Figure 3, which is a block chart of percent.

School size was determined by assigning a value of "small" to any school with less than 250 pupils as determined by the average daily attendance (ADA) in the 1980-81 school year as reported by the Oklahoma State Department of Education. A "medium" school was designated as one which had an ADA of 250 to 1000 students. A "large" school was designated as one which had an ADA over 1000.

The number of teachers in each size school system in the population as a whole was compared with the number of teachers in each size school system in the sample using percent. The chi square value for this calculation was 3.59 with 2 degrees of freedom, showing no significant differences.

Location of respondents using microcomputers is shown by county on the state map in Figure 4.

NUMBER OF TEACHERS

COUNT   ▦ 1 TO 200   ▦ 201-400   ▦ 401-600
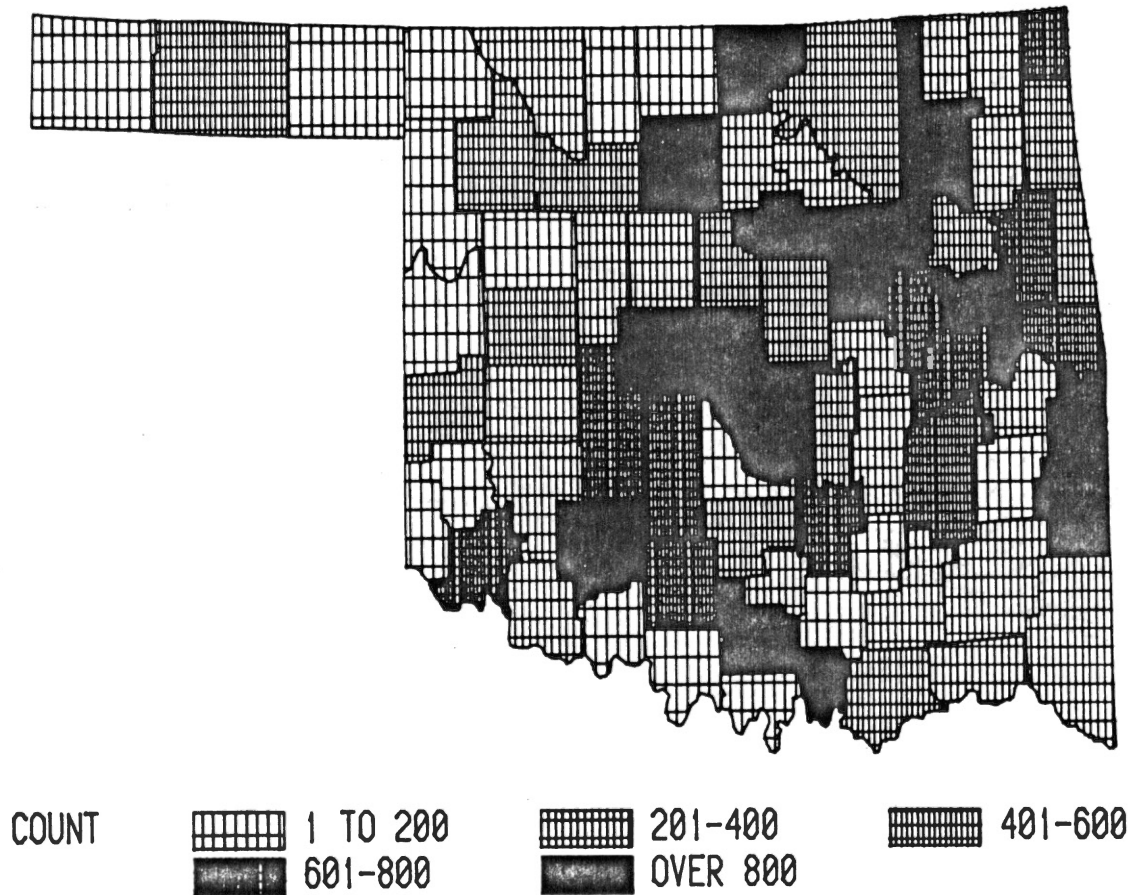   ▦ 601-800   ▦ OVER 800

Figure 2.   Frequency of Teachers in Population by County

SCHOOL SIZE

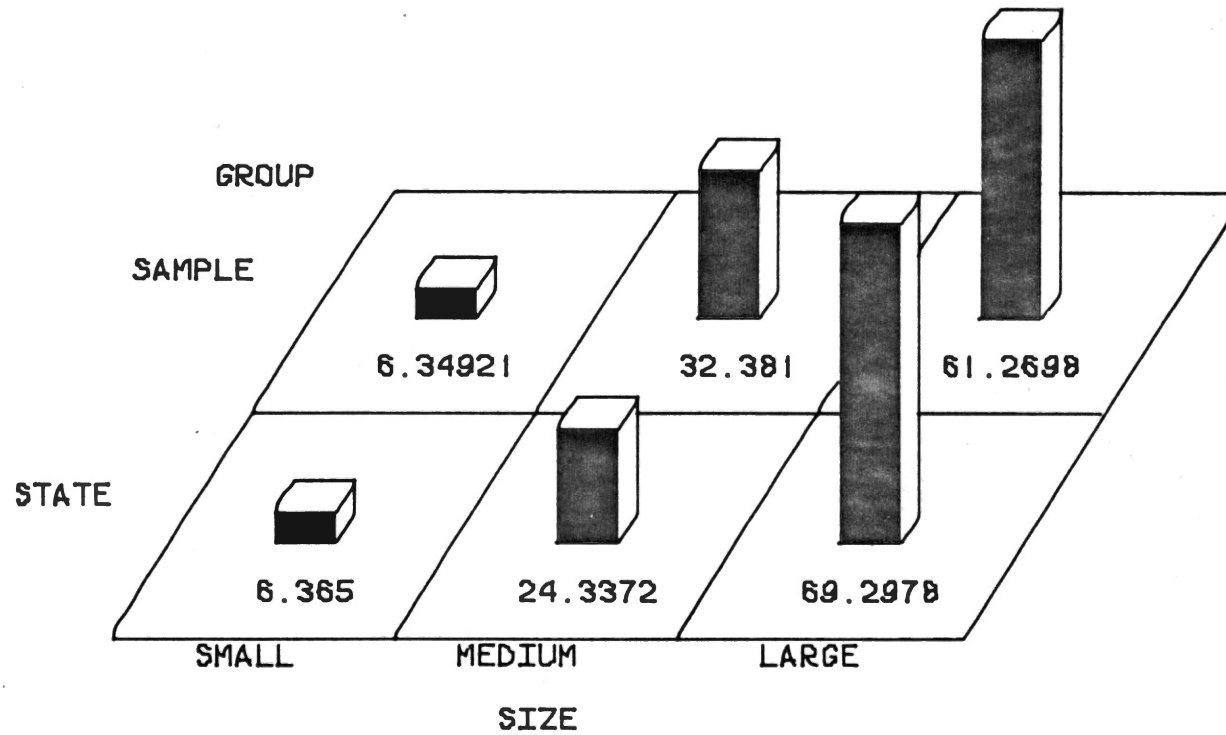BLOCK CHART OF PERCENT

Figure 3. School Size of Population and Sample

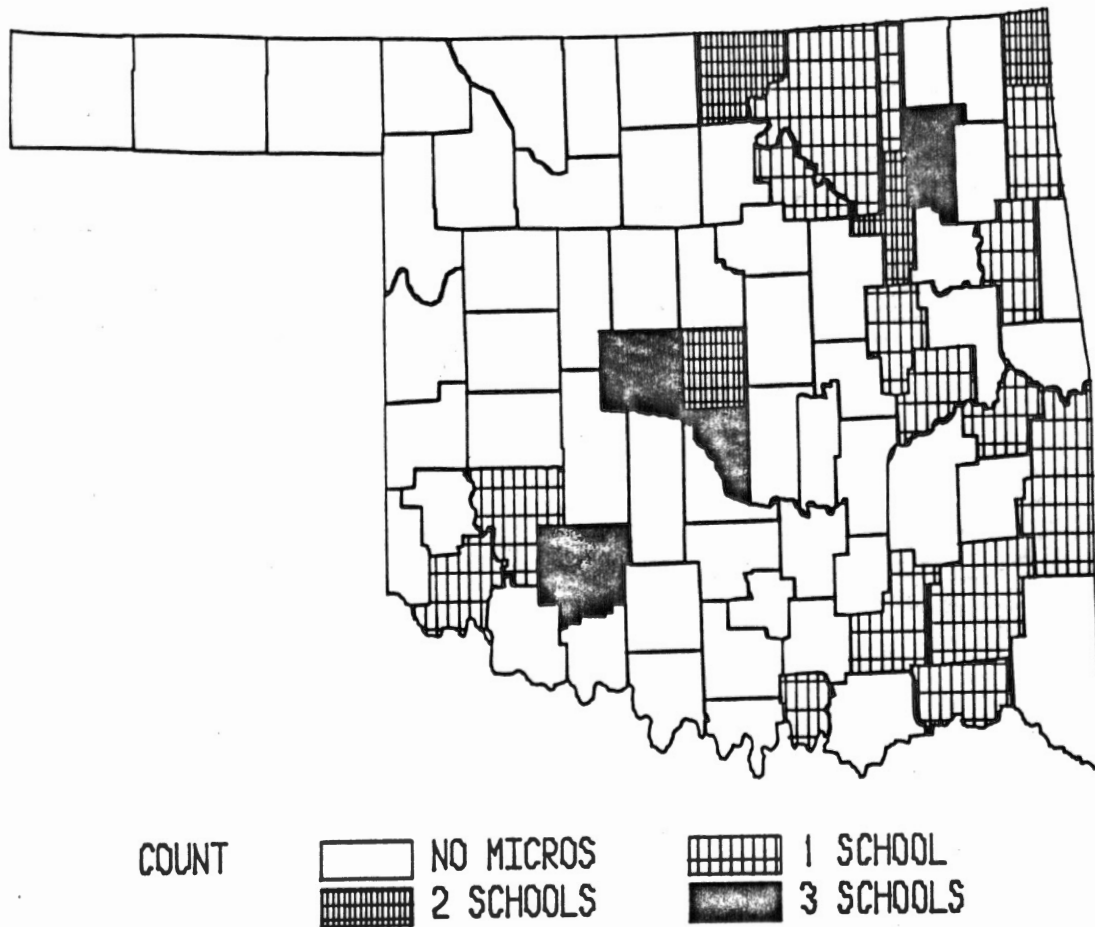# SCHOOLS REPORTING MICROCOMPUTERS

Figure 4. Location of Respondents by County

TABLE VII

SCHOOL SIZE OF SAMPLE AND POPULATION

	Small	Medium	Large
Group Sample	6.34%	32.38%	61.26%
State	6.36%	24.37%	69.30%

Analysis and Results of

Research Questions

This section focuses on the analysis and results of the data. Data were collected for the purpose of answering the five research questions posed in chapter one of the study.

Question One

Research question one sought to determine how many actual microcomputer users could be found in a sampling which included every fiftieth Oklahoma classroom teacher and what their use of their machines was. Twenty-eight respondents, or nine percent, reported that they were currently using microcomputers. All twenty-eight had been using the machines less than five years. Nine of these using teachers reported they had access to a microcomputer outside of school. Six owned their own microcomputer, as indicated in Table VIII.

TABLE VIII

RESPONSES FROM MICROCOMPUTER USERS

Question	Responses
Have used microcomputers in the past	26
Using 5 years or less	24
Presently using microcomputers	28
Access to outside microcomputer	9
Own their own microcomputer	6

The size school system where the microcomputer users were located is shown in Table IX.

TABLE IX

TEACHERS USING MICROCOMPUTERS
BY SIZE OF SCHOOL SYSTEM

	Size of School System		
	Small	Medium	Large
Number of Teachers	2	7	19

The number of years the using teachers have taught is shown in Table X.

TABLE X

TEACHERS USING MICROCOMPUTERS
BY YEARS TAUGHT

	Years Taught					
	0-4	5-10	11-15	16-20	21-25	25
Number of Teachers	8	6	10	1	1	1

This information was missing from one respondent so the total number in the table is not the full number of respondents.

The courses being taught, grade level and number of students served reported by the using teachers are listed in Table XI.

Seventy-seven percent of the respondents said although they were not personally using microcomputers in their classroom instruction, the machines were being used in their school system. The frequency of use at various grade levels is given in Table XII.

The respondents also indicated the courses being taught with microcomputers in their school system and estimated the number of students in these courses. These data are listed in Table XIII.

TABLE XI

COURSE INFORMATION FROM TEACHERS
USING MICROCOMPUUTERS

Course	Number of Students	Grade Level
Computer Literacy	40	11-12
	35	6- 8
Computing Language(s)	8	11-12
Basic Skills, Math	67	6- 8
	600	K- 6
Basic Skills, Reading	600	K- 6
	45	7
Basic Skills, Language Arts	3	3 -4
Simulations, Science	73	7- 8
	30	11-12
Enrichment/Games	10-20	10-12
Gifted/Talented	20	7- 9
Word Processing	8	11

TABLE XII

ALL RESPONDENTS SCHOOL SYSTEMS'
GRADE LEVEL OF MICROCOMPUTER
UTILIZATION

Grade	Frequency	Percent
Elementary	22	14.8
Middle School	33	22.1
High School	72	48.3
Adult Education	22	14.8
TOTAL MACHINES	149	100.0

Math skills and basic computer literacy comprise fully half of the microcomputer usage by the respondents.

The levels at which the various courses are being offered are detailed in Table XIV.

At the elementary school level, practice in math skills, playing games and practice in reading skills were the major uses of computer assisted instruction. At the middle school level, computer literacy, introduction to computing and math skills were taught with equal and most frequency. At the high school level introduction to computing was taught the most with both computer literacy and typing skills in second place.

TABLE XIII

ALL RESPONDENTS' ESTIMATE OF
SCHOOL SYSTEMS' COURSES AND
PERCENT OF STUDENTS

Course	Estimated Percent of Students
Math Basic Skills	19.23
Computer Literacy	15.38
Introductory Computing	15.38
Games	11.56
Science Simulations	7.69
General Problem Solving	7.69
Other	5.77
Reading Basic Skills	5.77
Typing Basic SKills	3.85
Social Studies Simulations	3.85
Language Arts Basic Skills	1.92
Business Simulations	1.92
Other Basic SKills	1.92
TOTAL	100.00

TABLE XIV

COURSE TAUGHT BY LEVEL OF SCHOOL

Course	Elementary Percent	Middle School Percent	High School Percent
Computer Literacy	9.0	22.2	15.3
Intro. Computing	0.0	22.2	23.1
Math Skills	36.3	22.2	0.0
Reading Skills	13.6	5.5	0.0
Language Arts	4.5	0.0	0.0
Typing Skills	0.0	0.0	15.3
Other Basic Skills	4.5	0.0	7.6
Business Simulations	0.0	0.0	7.6
Science Simulations	4.5	11.1	7.6
Social Studies Sim.	4.5	5.5	0.0
Problem Solving	0.0	5.5	7.6
Games	22.7	0.0	7.6
Other	0.0	5.5	7.6

Table XV details the type of computers found in the survey. The Apple computer was shown to be in use in more classrooms than any other make of computer. Radio Shack's TRS-80 was preferred next. The Apple and the TRS-80 combined were in use in 70 percent of the classrooms with other brands making up the remaining 30 percent.

TABLE XV

TYPE OF MICROCOMPUTER

Type of Microcomputer	Percent of Total
Apple	37.1
TRS-80	33.3
Atari	11.1
Comodore PET	7.4
Texas Instruments	7.4
Other	3.7
TOTAL	100.0

Only one respondent reported belonging to a software exchange network. Six reported they had produced their own software, twelve had software which had been made by students and fourteen were utilizing software authored by other teachers. Nineteen reported they learned to operate their microcomputers by using the manufacturers' handbook; 19 were taught by other users and 18 took courses in microcomputer operation. Some users checked several of these categories.

Eighteen users reported that they had the machines in their own classroom. Nineteen reported that they used a microcomputer laboratory. Seven said their machines were in the media center.

The administrative use of microcomputers reported by the respondents is recorded in Table XVI.

TABLE XVI

CURRENT ADMINISTRATIVE USE OF MICROCOMPUTERS

Use	Percent
Accounting	77.9
Scheduling	67.7
Grades	67.3
Attendance	65.7
Student Records	62.2
Scoring Tests	56.7
Test Analysis	50.0
Individual Diagnosis	41.1
Individual Prescription	12.5
Inventory Control	0.0

Most respondents listed several administrative uses for their office microcomputer.

Sources of funding are listed in Table XVII.

TABLE XVII

SOURCES OF FUNDING

Source	Frequency	Percent
Local School Board	23	60.5
State	10	15.8
Federal	4	10.4
Individual Gift	2	5.3
Other	2	5.3
Own Equipment	1	2.6
TOTAL	42	100.0

Listed in Table XVIII are the kinds of funds used to buy microcomputers. Not all users answered both the questions as to where they got their funds and what type they were. Therefore, the number of responses in Table XVII and Table XVIII are not the same.

TABLE XVIII

KINDS OF FUNDS

Fund	Frequency	Percent
Individual Grant	2	20.0
State Vo-Tech	2	20.0
Title IV-C	1	10.0
Title I	1	10.0
Matching Funds	1	10.0
PTA	1	10.0
Cooperative Education Office	1	10.0
General Fund	1	10.0
TOTAL	10	100.0

Question Two

Research question two dealt with the teachers' perception of the advantages and disadvantages of using the microcomputer in the classroom.   Both   users   and   non-users   answered   the   questions pertaining to these perceptions. Table XIX gives the results of all respondents'   perceptions   of   the   advantages   of   using   the microcomputer in classroom instruction.

TABLE XIX

ADVANTAGES OF MICROCOMPUTER USE
AS PERCEIVED BY TEACHERS

Advantages	Frequency	Percent
Individualized Instruction	74	20.5
Motivation	58	16.0
Preparation for Future	37	10.3
Introduction to Computing	36	10.1
Drill and Practice	25	7.0
Gifted/Talented	21	5.9
Job Training	20	5.6
Feedback	14	3.8
Meet Individual Needs	14	3.8
Problem Solving	14	3.8
Record Keeping	10	2.8
Time Management	9	2.6
Simulation	4	1.2
Versatility	4	1.2
LD/Special Education	4	1.2
Latest Information	3	0.8
Logical Thinking	3	0.8
Novelty	3	0.8
Research	2	0.6
Transfer of Learning	2	0.6

TABLE XIX (Continued)

Advantages	Frequency	Percent
Save Space	2	0.6
Software	1	0.3
TOTAL	361	100.0

The question requesting perceived advantages was completely open-ended and the responses were grouped by the researcher into the categories listed above. The teachers saw the possibility of individualizing instruction as the biggest advantage of microcomputer assisted instruction. They also felt the microcomputer was very motivating for children. They saw the microcomputer as the wave of the future and felt the children should be acquainted with it in the classroom.

The disadvantages of microcomputer use in the classroom as perceived by the teachers are listed in Table XX. Most of the disadvantages perceived by teachers had to do with the mechanics of utilizing microcomputers. The greatest perceived disadvantage was their cost. Following that was the concern that there would not be enough machines for each student to have his turn using them.

TABLE XX

DISADVANTAGES OF MICROCOMPUTER
USE AS PERCEIVED BY TEACHERS

Disadvantages	Frequency	Percent
Cost	51	22.9
Not Enough for All	30	13.5
Unqualified Personnel	24	10.8
Crutch/Distraction	15	6.8
Lack of Preparation Time	14	6.4
Lack of Space	13	5.9
No Personal Initiative	12	5.5
No Software	10	4.4
Gap in Basic Skills	9	4.2
Lack of Balance with Books	8	3.6
Busy Work	7	3.3
Impersonalization	4	1.8
See as Threat	3	1.5
Grading Problems	2	1.0
Supervision Problems	2	1.0
Wear and Tear	2	1.0
Theft	2	1.0
Programmed Learning	2	1.0
Need in all Grades	1	0.6
Ability Level Inadequate	1	0.6
Need for Logical Thinking	1	0.6

TABLE XX (Continued)

Disadvantages	Frequency	Percent
Need on all Levels	1	0.6
Not for all Ability Levels	1	0.6
Lack of Teacher Support	1	0.6
No Feedback	1	0.6
TOTAL	224	100.0

The third most frequently mentioned disadvantage reflected the teachers' need for instruction--their concern that the personnel trying to use the microcomputers would be unqualified. Very few teachers mentioned the lack of software as a disadvantage. Some felt use of the microcomputer would rob the students of their individual initiative, lead to a lack of balance with books, reading and other basic skills, and generally constitute "busy work". A few perceived the microcomputer to not be adaptable enough, yet adaptability ranked high as a perceived advantage. One respondent even saw the fact that the microcomputer required logical thinking to be a disadvantage, rather than an advantage.

Question Three

Research question three dealt with the teachers' perception of their administrators' attitude toward microcomputer utilization. Their receptivity is outlined in Table XXI.

TABLE XXI

TEACHERS' PERCEPTION OF ADMINISTRATORS'
RECEPTIVITY TO MICROCOMPUTER UTILIZATION

Perception	Frequency	Percent
Receptive	130	78.3
Non-receptive	36	21.7
TOTAL	166	100.0

The teachers who felt their administrators were receptive to educational microcomputer use outnumbered those who did not four to one.

Administrative use of microcomputers as reported by the teachers is listed in Table XXII.

TABLE XXII

ADMINISTRATIVE USE OF MICROCOMPUTERS
AS REPORTED BY TEACHERS

Administrative Use	Frequency	Percent
Already using microcomputers	100	30.7
Plan on using in future	40	12.3

The teachers reported that the administrators used microcomputers most frequently for accounting purposes. Scheduling and student records were the next most frequently reported administrative use of microcomputers.

Question Four

Research question four dealt with the non-using teachers' interest in possible future use of the microcomputer in their teaching. The figures for this question are in Table XXIII.

Teachers who were interested in using the microcomputer outnumbered those who were not interested almost four to one.

Question Five

Question five dealt with the needs perceived by the teachers for the implementation of microcomputers in their classrom in the future.

TABLE XXIII

TEACHERS' INTEREST IN USING
THE MICROCOMPUTER

Interested	Frequency	Percent
Yes	130	78.3
No	36	21.7
TOTAL	166	100.0

Shown in Table XXIV are the data regarding teachers' interest in taking training in the use of the microcomputer. Over four-fifths of the teachers responding to the question about learning to use the microcomputer were interested in taking training to operate and teach with the machines.

TABLE XXIV

TEACHERS INTERESTED IN TRAINING

Interested	Frequency	Percent
Yes	171	83.8
No	33	16.2
TOTAL	204	100.00

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The purpose of this descriptive study was to establish a data base describing Oklahoma classroom teachers' use of and/or interest in using the microcomputer in classroom instruction. A sample of Oklahoma classroom teachers was asked to cooperate and support the study.

The study was designed to obtain data from a sample consisting of every fiftieth Oklahoma classrom teacher. The descriptive survey method was used for this study.

The questionnaire which was mailed to the subjects first sought to ascertain whether or not the teachers were presently using microcomputers in their classroom instruction. Those who were currently using microcomputers were asked how long they had been using them, what kind they used, the source of funds for purchasing them, and what grade levels and subjects they taught using the microcomputers.

Teachers who were not currently using microcomputers were asked if they were interested in obtaining them. They were also asked if they were interested in taking training to learn how to operate the machines and how to teach with microcomputers.

All teachers, users and nonusers alike, were asked their perception of the advantages and disadvantages of using microcomputers in classroom instruction. They were questioned about their perceptions of their administrators' interest in using the microcomputers in the classroom. They were also questioned about the current administrative use of microcomputers in their school system. All respondents were asked demographic and personal information such as subject and grade level taught, class size, years taught, and location of school district.

The data analysis involved constructing frequency distributions for the purpose of supplying an actual count and percent of occurrence for each classification. The Statistical Analysis System (SAS) was used to analyze the data.

This chapter extends the purpose, the establishment of a data base, by bringing together the results of the study and the related literature. Conclusions and interpretations of the results are discussed relative to the review of the literature presented in Chapter II. The presentation focuses on the five research questions posed in the study. Implications of the findings and considerations for further research are also included in the discussion.

<div align="center">

Review, Conclusions, and Recommendations

for Further Research Relative to the

Five Research Questions

</div>

The following section will deal with the individual research questions posed in Chapter I. A brief review of the findings will

be presented followed by conclusions and recommendations for further research.

Question One

Question one asked "What are the extent and nature of microcomputer use by the sampling of Oklahoma classroom teachers?" Nine percent of the sampling of Okahoma classroom teachers were using microcomputers in the classroom at the start of the 1982-83 school year. Green and Roberts in their 1980 survey of Oklahoma school administrators found that approximately 33 percent of the schools in Oklahoma had microcomputers. Sampling the administrators would naturally locate more of the microcomputers as the administrators would be answering the questionnaire on the basis of their whole systems' usage, not that of an individual classroom.

However, seventy-seven percent of the Oklahoma classroom teachers surveyed stated that microcomputers were being used for instruction somewhere in their school system as a whole. Many teachers reported multiple administrative uses of the microcomputer.

All of the teachers currently using microcomputers in their classroom had started doing so within the last five years. A few of them had access to a microcomputer outside their classrooms and a few of them owned their own machines. More microcomputers were found at the high school level than elsewhere in the school systems. The machines were being used for teaching mainly computer literacy, introduction to computing and math skills. Some use of microcomputers at the elementary level was reported in teaching reading.

These findings agreed with both the national survey sponsored by the U. S. Department of Education (1981) and the 1981 Oklahoma survey (Green and Roberts) Teachers among the respondents already using microcomputers reported the Apple brand as being the most prevalent, with Radio Shack's TRS-80 a close second.

Microcomputer use in Oklahoma classrooms is such a rapidly changing field that the school systems need to be surveyed each year to keep the data current. National surveys also need to be made yearly to enable educators to keep abreast of the trends.

Question Two

Question two asked "What is the perception of the sampling of Oklahoma classroom teachers of the advantages and disadvantages of using the microcomputer in the classroom?" This question was answered by all respondents, users and nonusers alike.

The advantages of using the microcomputer in the classroom as perceived by the teachers had to do mostly with the improvement of instruction. The teachers felt the machines helped teachers individualize instruction, motivate their students, and helped prepare their students for the future by introducing them to the microcomputer. They perceived microcomputers as useful in teaching students of all levels of ability from the gifted and talented to the learning disabled. The teachers also perceived microcomputers as being useful in computer assisted instruction (CAI) in giving drill and practice, giving immediate feedback and in generally meeting the students' individual needs. They also perceived the microcomputer as being useful to them in such computer managed

instruction (CMI) functions as record keeping and time management.

These findings on the advantages of use of the microcomputer in both CAI and CMI were corroborated by the literature (Dershimer, 1980; Romstad, 1979; and Baylor, 1978). Jelden (1980) found that the incidence of Computer Assisted Instruction correlated positively with student grades.

The teachers' perception of the disadvantages of using the microcomputer in the classroom dealt mainly with concerns about implementation. First and foremost among the perceived disadvantages was the cost of the machines. They were also concerned that there be enough microcomputers in the classroom situation so that every child would have a chance to use them. They were concerned about the fact that so few classroom teachers knew how to operate or teach with the microcomputers and they felt that finding time to learn would be a problem. Wightman (1980) also noted these disadvantages.

A few Oklahoma teachers saw the microcomputer as a crutch or a distraction for the student. They thought its use might lead to a gap in basic skills or an impersonalization of instruction. None of these perceived disadvantages is substantiated in the literature (King, 1975). Few teachers worried about supervision problems or maintenance problems such as wear and tear or theft. Few teachers listed the lack of software as a disadvantage.

In the literature, teachers' reluctance to accept new technology is called the "John Henry Effect" (Sharry, 1975; Floyd, 1972; Bozeman, 1978). It can be overcome by faculty, students and administrators working together toward the establishment of the

computer in the classroom (Townsend, 1981).

Further research into teacher attitudes toward microcomputers could be accomplished by analyzing the change in attitude that occurs with experience with the microcomputer. Experienced users could also suggest ways in which new users could be more efficiently trained.

Further research could also be done on the questions raised by the NEA (1982) study. Is the use of the microcomputer widening the gap between the haves and the have nots? Are microcomputers found more in larger, richer school districts and if so, what effect is this having on the students?

The most important area--determining the effect of microcomputer assisted and managed instruction on student grades--has remained largely unresearched. With the growing proliferation of microcomputer laboratories in the schools, it should be possible now to start gathering such data.

Question Three

Question three asked "What is the perception of the sampling of Oklahoma classroom teachers of their administrators' attitude toward microcomputer utilization in the classroom?" Fully three-quarters of the teachers questioned perceived their administrators' attitude toward microcomputer utilization to be positive. Thirty percent of the teachers' administrators were already using microcomputers for administrative purposes and an additional twelve percent planned to use them in the future.

Administrators who resist adoption of classrom microcomputers do so because they refuse to face the problems of computer use and because they refuse to pay for the computers. Better understanding of what the computer can do helps solve these problems (Floyd, 1972).

Question Four

Question four asked "What is the interest of the sampling of Oklahoma classroom teachers in possible future use of the microcomputer in their teaching?" More than four-fifths of the non-using teachers reported an interest in using the machine in the future. More than three-quarters of the nonusing teachers reported a willingness to take instruction in learning how to operate the machines and teach with them.

This finding implies a need for in-service training to equip interested teachers with the necessary skills for implementing this new technology. Training pre-service teachers in the use of the microcomputer in instruction could and should be made a requirement for graduation. This would help persons preparing to teach to meet the high educational standards recommended by the U. S. Department of Education's (1983) National Commission on Excellence in Education's report. In their report, the commission considered computer science to be one of the "new basics". The commission also felt that one-half year of computer science should be required of all high school graduates.

Question Five

Question five asked "What are the needs perceived by the teachers for the implementation of microcomputers in their classrooms in the future?" The teachers were concerned about their ignorance of this new technology. Over three-quarters of the respondents were interested in using the microcomputer in their classroom instruction and willing to take training. They knew the high initial cost of obtaining the equipment would be a problem. Very few teachers felt the microcomputer was an educational frill. They were interested and eager to learn about educational applications of the microcomputer.

Miller (1982) found microcomputers successful in generating enthusiasm among teachers, parents, and the community. If introducing Oklahoma students to the microcomputer is to be considered a high priority item, the funds must be made available for the necessary equipment and training.

<div align="center">Summary</div>

This chapter offers a final overview of the investigation and findings. A review of the study was presented in the first section. Implications of the findings and considerations for further research were discussed relative to each of the five research questions.

Microcomputers are a tremendously versitle tool in education. They motivate students of all levels of ability. They extend the teacher's time, ability and attention to each student. They are durable, non-polluting and energy efficient. They are cost-efficient and adaptable.

Oklahoma classroom teachers definitely ARE interested in adopting microcomputers. They apparently have had enough exposure to the machines, even if they are not using them themselves, to realize their tremendous potential in classroom instruction and management. They would agree with Forman (1982) that the microcomputer is the "Educator's Dream Machine". They are willing to be trained in using the machine and are willing to adapt their teaching methods to this new strategy. They see teaching with mircocomputers as the wave of the future and want to be a part of it.

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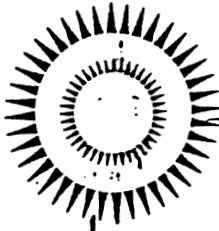
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APPENDIXES

APPENDIX A

CORRESPONDENCE

OKLAHOMA PUBLIC SCHOOL RESEARCH COUNCIL

August 10, 1982

The Oklahoma Public School Research Council is conducting a
survey of classroom teachers on their use of, or interest in
using, microcomputers in classroom instruction.

You have been chosen to take part in this study. Could you
please take the time now, before you become involved in the
school year, to fill out the enclosed questionnaire?

The questionnaire, without your name on it, is to be returned
to the Council in the enclosed stamped envelope.

Would you please at the same time also fill in the personal
information on the enclosed post card and mail it separately,
so that we know that you have participated in the study?
There is a place on the post card for you to check if you
are interested in receiving a copy of the results of this
survey.

Thanks so much for your cooperation.

Dr. Kenneth St. Clair,
Research Director

Joan T. Barrick,
Research Assistant

KS:jb
Enc: Survey, Post Card,
Stamped Envelope

OKLAHOMA PUBLIC SCHOOL RESEARCH COUNCIL

AFFILIATED UNIVERSITIES
The University of Oklahoma
Oklahoma State University

OKLAHOMA STATE UNIVERSITY
Stillwater, Oklahoma
74074

OFFICE OF THE EXECUTIVE SECRETARY
Gundersen Hall, Room 309
Phone 624-7244

September 10, 1982

Several weeks ago you received a questionnaire from the Oklahoma Public School Research Council about your use of, or interest in using, microcomputers in your classroom instruction.

Since we have not yet received your reply, we are enclosing a second copy in case your first copy was misplaced. Would you please take a few minutes now to fill in the questionnaire, without your name on it, and mail it in the enclosed stamped envelope?

Would you at the same time fill in the personal information on the post card and mail it separately so that we will know that you have participated in the survey? If you are interested in the results of this survey, there is a place to check on the post card.

Thanks so much for your cooperation.

Dr. Kenneth St. Clair,
Research Director

Joan T. Barrick,
Research Assistant

KS:jb
Enc: Survey, Post Card,
Stamped Envelope

APPENDIX B

INSTRUMENT

Survey of
Educational Utilization of MICROCOMPUTERS in Oklahoma
College of Education
Oklahoma State University

1. Have you utilized microcomputers in instruction in the past? _____Yes _____No

    If so, how long have you been using them?_____

2. Do you currently utilize microcomputers in your instruction? _____Yes _____No

3. Do you plan to utilize microcomputers in your classroom instruction in the future?

    _____Yes _____No _____ Don't Know

IF YOU ARE NOT CURRENTLY UTILIZING MICROCOMPUTERS, PLEASE GO TO QUESTION 12, top of page 3.

4. Please check the number and location of the equipment you use:

Number	Kind of Equipment	Location (Your classroom, lab, etc)
_____	Apple	_____
_____	Atari	_____
_____	Commodore PET	_____
_____	Texas Instruments	_____
_____	TRS-80 Radio Shack	_____
_____	Other (Specify)_____	_____

5. Would you indicate the courses in which you are using microcomputers by completing
    the blanks for number of students and grade level:

Courses	Number of Students	Grade Level
Computer Literacy	_____	_____
Introduction to Computing Language(s)	_____	_____
Basic Skills--Math	_____	_____
Basic Skills--Reading	_____	_____
Basic Skills--Language Arts	_____	_____
Basic Skills--Typing	_____	_____
Basic Skills--Other (Specify)_____	_____	_____
Simulations--Business/Economics	_____	_____
Simulations--Agriculture	_____	_____
Simulations--Home Economics	_____	_____
Simulations--Science	_____	_____
Simulations--Social Studies	_____	_____
Simulations--General Problem Solving	_____	_____
Simulations--Other (Specify)_____	_____	_____
Enrichment/Games	_____	_____
Other (Specify)_____	_____	_____

6. What kind of software programs are you using?

Commercially produced (list by title and publisher):

_____

_____

_____

_____

Locally produced (list by title and author--you? students? other teachers?):

_____

_____

_____

_____

7. Do you or your school belong to a software exchange network? (Describe):

_____

_____

8. What was the source(s) of funds to buy your microcomputers? Check all that apply:

Funding	Kind (Title, Program, etc.)
_____Federal Funding	_____
_____State Funding	_____
_____Local Funding	
_____School Board	_____
_____Civic Club	_____
_____Individual Gift	_____
_____Own Equipment	_____
_____Other (Specify):	_____

9. How did you learn to operate your microcomputers? Check all those that apply:

_____Manual and books from the manufacturer of the equipment

_____Taught by other microcomputer users

_____Courses taken (Specify):_____

_____

10. Do you have access to a microcomputer outside the school system?_____Yes _____No

Do you own your own microcomputer? _____Yes _____No

If so, what kind is it? (Specify):_____

11. What literature and books have you found helpful?_____

_____

IF YOU ARE NOW USING MICROCOMPUTERS, SKIP TO QUESTIONS 16 AND CONTINUE ANSWERING...

IF YOU ARE <u>NOT</u> CURRENTLY UTILIZING MICROCOMPUTERS, PLEASE START ANSWERING HERE:

12. If you are not presently using microcomputers in your instruction, would you **be** interested in obtaining them? _____Yes _____No _____Maybe

13. Has your administrator been receptive to starting a program using microcomputers in classroom instruction? _____Yes _____No _____Don't Know

14. Would you be interested in taking initial or further training in the use of microcomputers in the classroom? _____Yes _____No _____Maybe

15. Are microcomputers being used for instruction anywhere in your school system, or are they planned for next year? _____Yes _____No _____Don't Know

    If Yes, at what grade level?_____

    for what subjects?_____

16. What <u>advantages</u> do you see to the use of microcomputers in classroom instruction?

    _____
    _____
    _____
    _____

17. What <u>disadvantages</u> do you see to the use of microcomputers in the classroom?

    _____
    _____
    _____
    _____

18. For what, if any, <u>administrative</u> purpose(s) does your district use or plan to use microcomputers? Please check all that apply:

	Currently Using	Plans to Use	Don't Know
Accounting and/or business records	_____	_____	_____
Scheduling	_____	_____	_____
Student Records:			
Grades	_____	_____	_____
Attendance	_____	_____	_____
Other (Specify)_____	_____	_____	_____
Scoring/processing tests	_____	_____	_____
Test Analyses	_____	_____	_____
Individual student diagnosis	_____	_____	_____
Individual student prescription	_____	_____	_____
Inventory control	_____	_____	_____
Other (Specify)_____	_____	_____	_____

PLEASE CHECK THE PERSONAL INFORMATION THAT APPLIES (no name, please):

Elementary	Middle School/Junior High	High School
____Kindergarten	____Sixth Grade	____American History
____First Grade	____Seventh Grade	____Art
____Second Grade	____Eighth Grade	____Band
____Third Grade	____Ninth Grade	____Biology
____Fourth Grade		____Business
____Fifth Grade	____Art	____Chemistry
____Sixth Grade	____Band	____Computer Literacy
	____Computer Literacy	____Counselor
____Art	____Counselor	____Dist. Education
____Computer Literacy	____Crafts	____Drafting
____Counselor	____EMH	____Drivers Ed
____EMH	____Family Living/Home Ec	____EMH
____Gifted/Talented	____French	____English
____LD	____Gifted/Talented	____French
____Librarian	____Industrial Arts	____Geography
____Music	____Journalism	____Government
____PE	____Language Arts	____History
____Special Ed	____LD	____Home Ec
	____Librarian	____Industrial Arts
____Other (Specify):	____Math	____Journalism
_____	____Orchestra	____LD
	____PE	____Librarian
	____Reading	____Math
	____Science	____Orchestra
	____Spanish	____PE
	____Special Ed	____Physics
	____Speech/Drama	____Physiology
	____Social Studies	____Physical Science
	____Vocal Music	____Reading
		____Science
	____Other (Specify):	____Social Studies
	_____	____Spanish
		____Speech/Drama
		____Vocal Music
		____Vocational Agriculture
		____Other (Specify):
		_____

Number of students taught:_____

Years taught: ____0-4 ____5-10 ____11-15 ____16-20 ____21-25 ____25 and up

School District Name_____ District Number_____

County_____

PLEASE PLACE THIS COMPLETED SURVEY IN THE ENCLOSED STAMPED ENVELOPE AND MAIL

PLEASE ALSO COMPLETE THE ENCLOSED POSTCARD AND MAIL IT SEPARATELY FROM THIS SURVEY

If you are interested in a copy of the results of this survey, check YES on the post card.

THANK YOU VERY MUCH

VITA

Joan T. Barrick

Candidate for the Degree of

Doctor of Education

Thesis: CURRENT USAGE OF MICROCOMPUTERS IN THE OKLAHOMA
PUBLIC SCHOOL CLASSROOM AS PERCEIVED
BY TEACHERS

Major Field: Educational Administration

Biographical:

Personal Data: Born in Albany, New York, August 8, 1930, the
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Professional Expereince: Taught kindergarten in Morrison,
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Stillwater, Oklahoma, 1970-1974; taught earth and life
science to seventh and eighth grades in Stillwater,
Oklahoma, 1974 to present.