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## **The Uses and Effectiveness of Computers in Educational Administration**

Steven W. Warren

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THE USES AND EFFECTIVENESS OF  
COMPUTERS IN EDUCATIONAL ADMINISTRATION

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A Project  
Presented to  
The Graduate Faculty  
Central Washington University

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
Steven W. Warren

July, 1991

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COMPUTERS IN EDUCATIONAL ADMINISTRATION

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The purpose of this study was to assess the uses and effectiveness of computers in educational administration. Principals from the high schools of Washington State's Mid-Valley AA League responded to a questionnaire regarding the uses of computers in their buildings and the perceived effectiveness of computers used for administrative tasks. Survey results indicated that the majority of high schools in the Mid-Valley AA League have used computers for common administrative tasks, and principals found that these tasks were accomplished more effectively with a computer.

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## CHAPTER I

### Background of the Study

#### Introduction

"The computer has been recognized as an invaluable tool in expanding the principal's capacity for effective school management" (Mojkowski, 1986, p. 46).

The above statement by Mojkowski has special significance when one considers how today's school administrator has become increasingly besieged by the pressures of managerial and leadership responsibilities. Demands from the public, along with increased expectations by state and federal legislatures for greater accountability, have caused school administrators to seek more efficient means of operating schools. In addition, the lack of adequate funding for education has left principals with reduced clerical and administrative support personnel (Mojkowski, 1986).

Fortunately, computer technologies have provided a viable answer to this administrative workload dilemma, and school administrators have increasingly utilized computer capabilities to confront these demands (Mojkowski, 1986).

The purpose of this study was to determine the uses and effectiveness of computers in educational administration by surveying the principals from the eight high schools of Washington State's Mid-Valley AA League. Essentially, the study sought to answer the following questions:

1. What are the current uses of computers in educational administration?
2. How effective are computers at accomplishing administrative tasks?
3. Who operates the computer for specific administrative tasks?
4. What are the primary reasons principals use computers in the administration of their buildings?

#### Need for the Study

The project undertaken in the present study was a direct outgrowth of a request from the writer's district administration to assess computer use in the administration of other AA high schools in our area. In essence, the study sought to determine if Othello High School was on a par with local high schools of similar size regarding computer use in building administration.

#### The Purpose of the Study

The purpose of this study was to assess the uses and effectiveness of computers in educational administration by

surveying the principals from the eight high schools of Washington State's Mid-Valley AA League.

Limitations of the Study

For purposes of succinctness and focus, it was necessary to set the following limitations for this study:

1. Research. The review of literature and research summarized in Chapter II did not precede 1983.
2. Population Surveyed. The study was limited to one population sample:
  - a. A survey of the eight high schools in Washington State's Mid-Valley AA League which included:
    - Eastmont Senior High School
    - Ellensburg High School
    - Hanford Secondary School
    - Othello High School
    - Prosser High School
    - Selah High School
    - Sunnyside High School
    - West Valley High School
  - b. Surveyed respondents held positions as high school principals.
  - c. The survey was limited to high school principals from eight high schools in central Washington's Mid-Valley Double 'A' League.

3. Characteristics of the Population. Further delimitations considered in this study were represented in the population characteristics:
  - a. The principals surveyed may have had different levels of experience and familiarity with computers.
  - b. The use of computers for accomplishing administrative tasks at the high schools surveyed may have been affected by funding concerns.
  - c. Those persons other than the principal who used the computer to accomplish administrative tasks may have had different levels of experience and familiarity with computers.
  - d. The findings represented the responses and perceptions of the sample group at only one time during the school year (March, 1991).
4. The Survey Instrument. Limitations assigned to the survey instrument in the study included the following items:
  - a. The survey instrument was limited to eight selected uses of the computer in educational administration.
  - b. Respondents may have interpreted the eight selected uses of the computer in educational administration differently.

c. The survey instrument was primarily limited to forced-choice answers.

5. Presentation and Analysis of Data. The study concerned itself primarily with the presentation and analysis of survey data obtained from principals in seven of the eight high schools surveyed. One school did not respond to the survey.

#### Definition of Terms

Terms used in the context of this study have been defined as follows:

Attendance was the period-by-period and daily accounting of students not present at school and quarterly, semester, and yearly attendance tracking (Crawford, 1987).

Budgeting was the distribution and accounting of funds provided by the district to the building principal for the operation of the school (McCarthy and Shalvoy, 1989).

Class scheduling was the matching of students with courses, class sections, and teachers (Crawford, 1987).

Computer was an automated unit that receives, processes, and outputs information. A microcomputer - also called a personal computer - was considered a computer (Luehrmann and Peckham, 1983).

Effectiveness was the extent to which a computer's performance of a specific administrative task met the expectations of the principal (Touchton, 1987).

Grade reporting was the periodic generating of documents reporting the achievement of students (Crawford, 1987).

Inventory management was the cataloging and tracking of materials and supplies (Crawford, 1987).

Student records was considered student registration information, grades, and transcripts, disciplinary records, and health records (Nelson, 1989).

Test scoring was considered the grading of any school-wide or grade level test; local, standardized test; or competency-based test for graduation (Kearsley, 1988).

Word processing was "the writing of new text or the recalling of a previously written text from the computer memory, editing it, and producing it in a final form on paper" (Crawford, 1987, p. 13).

## CHAPTER II

### Review of Related Literature

A search of the Education Resources Information Centers (ERIC) data base identified a significant body of literature and research published from 1985 to 1989 regarding computer uses and effectiveness at performing specific administrative tasks. Additionally, the approach principals have taken toward the computer and the potential for increased principal effectiveness through use of the computer was commonly addressed.

Accordingly, the literature reviewed in Chapter II has been organized and presented in the following sections:

1. Specific Uses of the Computer in Educational Administration.
2. Computer Effectiveness in Educational Administration.
3. Administrative Approach to Computers.
4. Computer Use and Implications for Principal Effectiveness.
5. Summary.

Specific Uses of the Computer  
in Educational Administration

According to a survey by Barbour (1987), the most common use of the computer in educational administration was word processing. Seventy-eight percent of administrators surveyed said that they had personally used the computer as a word processor. Further, Barbour cited keeping student records as the most common administrative task performed on the computer. Attendance, budgeting, class scheduling, and test scoring were also cited by Barbour as common uses of computer technology in educational administration.

Crawford (1987) cited four critical areas computers commonly address: student records, class scheduling, attendance, and grade reporting. Other administrative functions cited by Crawford included word processing, budgeting, inventory records, and planning.

McCarthy (1989) has taken the position that class scheduling has been one of the most complex, burdensome tasks encountered by school administrators. However, according to McCarthy, programs such as the CIMS III (Comprehensive Information Management for Schools III) system have been utilized by principals to determine "which courses should be offered at which times to produce the minimum number of conflicts so as many students as possible can take courses they want" (p. 10).

Barbour (1987) has focused on student recordkeeping as the most common administrative task for which the computer has been employed. Student records, including grade transcripts, current grades, discipline reports, and personal information have been kept in different files and inaccessible to any one individual. As a result, principals have experienced delays in dealing with parents, teachers, and students (McCarthy, 1989). Further, the paperwork generated in maintaining separate files for student information has been immense (Pogrow, 1985).

Pogrow (1985) has explained, however, how computerized recordkeeping systems have been utilized to record and store all pertinent information in a single memory location available to all for whom the information has been necessary. Further, according to Pogrow, a reduction in paperwork of 50 to 90 percent has been realized through the use of computers in student recordkeeping.

Barbour (1987) cited word processing as the most common use of the computer by administrators. Though not considered an administrative task, Barbour reported that 78 percent of administrators including superintendents, assistant superintendents, principals, and assistant principals have personally used computers as word processors.

Further, Shalvoy & Morgan (1989) indicated that virtually all correspondence including reports, forms, letters, and contracts have been produced more efficiently on the computer using word processing programs. Undetectable

editing has produced professional, letter-perfect correspondence quickly and accurately (Crawford, 1987) and, according to Chen (1989), "parents will benefit from increased communication as reports, letters and other forms of communication can be produced more efficiently" (p. 37).

Barbour (1987) stated that attendance tracking has been another common use of the computer in educational administration. Applied most effectively through networking computers, attendance programming has allowed teachers to take roll at the push of a button and electronically send attendance information to the principal's office for tabulation and storage (McCarthy, 1989). According to McCarthy, paper trails have been avoided and teachers' time conserved.

In addition, McCarthy (1989) reported that computer generated attendance information has been collected at the central office, analyzed, and sent to the district office where reports based on weekly, daily, and period-by-period attendance profiles have been easily produced.

Pogrow (1986) added that computerized home dialing systems, working in conjunction with attendance programming, have called absent students' homes and played prerecorded messages that informed parents of their children's absences. According to Pogrow, automatic telephone dialing has saved tremendous amounts of clerical time.

According to a survey by Touchton (1987), budget preparation was a computer application used by a majority of educational administrators. Seventy-six percent of school administrators who have used computers cited budget preparation as a task to which they have applied computer technology. Results of a study by Barbour (1987) showed that 32 percent of administrators surveyed had applied computers to budgeting. Both studies reported budgeting as a primary application of computer technology.

McCarthy (1989) stated that computerized budget preparation has allowed principals access to current balance updates, records of all activities in an account, and the ability to enter different budget scenarios in order to predict the most efficient use of funds. Applied to budgeting problems, the computer has been much more efficient than manually calculated projections (Crawford, 1987).

Barbour (1987) reported that 28 percent of administrators surveyed indicated that they have used computers for inventory management. "Software used for this purpose forms the function of an electronic filing system adapted to the task of cataloging equipment and other fixed assets, inventory, textbooks, and other items" (Crawford, 1987, p. 13). Inventory management as a computer application has allowed for filing, sorting, searching for and reporting inventory records (Crawford, 1987).

According to Watson and Morgan (1989), a computer accessory useful for inventory management has been the bar coder which has enabled check-out and return of any item to be accomplished electronically. Further, the use of bar coders for textbook inventory has saved the Dayton (Ohio) Public School District an estimated "\$250,000 in replacements" (Watson & Morgan, 1989, p. 32).

High School principals have indicated that grade reporting has been one of the administrative tasks for which they have needed the most assistance (Pogrow, 1986). However, Touchton's (1987) study found that 56 percent of educational administrators surveyed had applied the computer to grade reporting.

McCarthy (1989) reported that, using on-site programming, teachers have entered daily grades onto a computer which, having tabulated the information, can send data at any interval desired to the central office where report sheets can be electronically generated. Further, the grading trends of teachers, subjects, and departments can be analyzed in an effort to evaluate the success of students and teachers (Marcum, 1987).

According to Barbour (1987), test scoring has been another common computer application used by educational administrators. Though primarily used by classroom teachers, test scoring and reporting programs have been useful for

competency and achievement testing at the local level and, according to Barbour, eleven percent of administrators surveyed have used computers for this purpose.

Chen (1989) added that "programs with further capabilities to conduct item analysis and to generate test statistics including the number of cards scored, the highest and lowest percentage scores, the mean score, and a score distribution table are also highly desirable" (p. 36). Generation and scoring of diagnostic tests and production of reports for special education management has been another area in which computerized test scoring has been particularly valuable (Pogrow, 1986).

#### Computer Effectiveness in Educational Administration

There has been widespread agreement as to the computer's effectiveness at accomplishing a variety of administrative tasks. According to Barbour (1987), practicing administrators have cited the following reasons as the most important benefits offered by computer use:

1. The time saved using computer technology to handle administrative tasks.
2. The ease with which stored information can be accessed.
3. The accuracy of the information and reports generated by the computer.

In more general terms, Hanson and Trbovich (1985) reported that the computer "can help an organization run more economically, more efficiently" (p. 4).

According to Crawford (1987), the effectiveness of computer use in an administrative capacity has been greatest when applied to the following characteristics:

1. Massive amounts of data have been processed.
2. Information processed has been highly repetitive.
3. Information has been needed quickly.

Educational administrators have been compelled to perform a great number of tasks at an unrelenting pace (Sergiovanni, 1987). Since these tasks require massive amounts of repetitive information needed quickly, Sergiovanni's statement has met the characteristics for effective computer use in educational administration listed above by Crawford (1987).

Pogrow (1985) added that the effectiveness of computer use in educational administration has been increased when computers share information from different locations within the school or school district. Therefore, networking has been a more efficient use of the computer's abilities because it has allowed users to share information by connecting personal computers with other computer stations and mainframe computers (Meyer, 1989).

Further, Pogrow (1985) stated that administrators have too often purchased stand-alone computers for individual applications only to find that much more time savings and efficiency would have been realized through networking.

#### Administrative Approach to Computers

The approach principals have taken toward the computer was another common theme found in the literature. For example, Mojkowski (1986) indicated that one impediment to expanded computer use has been that many principals have viewed the computer as one more innovation. Viewed in this manner, implementation of the computer in an effective manner has been unlikely.

Crawford (1987) categorized principals into the following groups based on their approach to computers:

1. Those who have been using computers for years were the adventurers.
2. Those who were just beginning to use computers were the pragmatists.
3. Those who have feared and avoided computers were considered recalcitrants.

According to Pogrow (1985), the approach a principal has taken toward the computer has affected both its uses and overall efficiency.

Touchton (1987) indicated that 82 percent of administrators surveyed reported that the computer they have used for administrative tasks has met their expectations.

However, according to Dede (1989), successfully meeting expectations for computer technology in educational administration has depended largely on careful planning before implementing or purchasing computer technology.

It has been Marcum's (1987) assertion that some principals have had to begin careful planning by overcoming feelings of frustration and lack of control that computer technology can create. For others, it has meant no longer ignoring computers as just another educational fad (Mojkowski, 1986). And for still others, it has meant becoming directly involved with the computer "as opposed to communicating with intermediaries" (Pogrow, 1985, p. 51).

Lemon (1985) suggested that principals first familiarize themselves with a simple, word processing program before working with more complex programming such as data base, spreadsheet, and specific application programs.

In planning for the implementation of computer technology in administration, McKibbin (1986) suggested interviewing administrators who had already begun utilizing computers. According to Cooper and Forrer (1987), relying on the experience of others has prevented costly mistakes.

Kearsley (1988) stated that implementation of computer technology in educational administration has required a principal who is knowledgeable about the potential uses, capabilities, and limitations of computers and computer programming. Further, according to Kearsley, successful implementation of computer technology has included "staff

orientation and training, facilities planning, backup procedures, security considerations, and job re-definitions" (p. 66).

According to Mojkowski (1986), computer use has not been a panacea to the problems of educational administration, and computers have not changed poor managers into good managers. Conversely, a principal must be a good manager and planner if computer use is to be effective (Pogrow, 1986).

#### Computer Use and Implications for Principal Effectiveness

Less research was available linking computer use in educational administration to principal or school effectiveness. Various authors did, however, report their perceptions of principal and school effectiveness based on their personal experience using computers in an administrative setting. For example, Mojkowski (1986) commented that "information is at the core of both school improvement and effective leadership and management. Technology could be the means through which school effectiveness will be realized" (p. 46).

Just as the quality of human resource and educational leadership displayed by the principal have impacted overall school effectiveness, the principal's technical and managerial expertise have also played an important role (Sergiovanni, 1987). However, according to Sergiovanni,

there has existed a perception among principals that too much time has been spent on routine, managerial tasks and too little time on leadership activities.

Barbour (1987) stated that the primary reason educational administrators used computers was the time they saved in performing managerial tasks. According to Kearsley (1988), the time saved through use of computers can be applied to the needs of students, teachers, and parents.

Groves and Wren (1987) suggested that, through the computer, educational administrators can provide more effective management and "more resources to use for our most important objective, which is the highest quality education possible for our students" (p. 124). According to Mojkowski (1986), through improved decision-making and resource management, the principal can utilize computer technology as a tool for school improvement and enhanced leadership.

#### Summary

The research and literature summarized in Chapter II tended to support the following predominating themes:

1. Principals have applied computer technology to a variety of administrative functions, though Chapter II focused on eight predominating computer uses.
2. Properly applied, the computer has been perceived as being very effective when used to accomplish administrative tasks.

3. The approach principals have taken toward computer technologies has affected the use and effectiveness of computers in educational administration.
  4. Some practicing administrators have perceived that the computer has increased principal effectiveness.
-

## CHAPTER III

### Procedures of the Study

The purpose of this study was to assess the uses and effectiveness of computers in educational administration by surveying the principals from the eight high schools of Washington State's Mid-Valley AA League.

A description of the following procedures employed in conducting the present study has been presented in Chapter III:

1. Design and development of the survey instrument.
2. Population group/sample surveyed.
3. Administration of the survey instrument.
4. Treatment of the data obtained from the instrument.

### Design and Development of the Survey Instrument

The review of related literature summarized in Chapter II served as the basis for the design of the survey instrument used in the present study. For example, the following eight administrative uses of the computer were selected for use in the survey instrument based on the frequency with which they were cited in the related literature and research:

Class Scheduling  
Student Records  
Word Processing  
Attendance Tracking  
Budgeting  
~~Inventory Management~~  
Grade Reporting  
Test Scoring

The survey questionnaire was constructed around these eight selected uses of computers in educational administration. Additionally, an opportunity was provided for respondents to include uses of the computer for administrative tasks not listed.

Within the eight selected uses of the computer in educational administration, response categories were provided in order to answer the following questions:

1. Who operated the computer for the specific administrative task?
2. How effective was the computer at accomplishing the specific administrative task?

Finally, a list of reasons administrators have used computers in the administration of their buildings was generated from the review of related literature. Respondents were asked to rank the following in order of importance:

1. Time saved in handling administrative tasks.

2. Time provided for more meaningful activities such as educational leadership and human resource management.
3. The accuracy of information accessed.
4. The ease with which information is accessed.

The survey instrument was primarily composed of forced-choice items which limited the respondents' choices for open-ended responses. However, an opportunity was provided for respondents to list additional uses of the computer in the administration of their buildings.

The questionnaire was written on standard, letter-sized paper and required two pages. Brevity was emphasized in the belief that respondents would be more likely to return the survey. A survey cover letter explaining the purpose of the survey and providing general directions for its completion was also provided (see Appendix A). A complete text of the survey instrument has been provided in Appendix B.

#### Population Group/Sample Surveyed

For the purpose of the present study, the population surveyed included the principals of the eight high schools of central Washington's Mid-Valley AA League. The principals surveyed represented the following schools:

Eastmont Senior High School

Ellensburg High School

Hanford Secondary School

Othello High School  
Prosser High School  
Selah High School  
Sunnyside High School  
West Valley High School.

#### Administration of the Survey Instrument

In March of 1991 questionnaires were delivered by mail to the principals from the eight high schools of the Mid-Valley AA League. Self-addressed, stamped envelopes were included in an effort to ensure a high rate of survey return. Within the following two weeks, seven of the eight questionnaires had been returned. In an attempt to obtain the last survey, a second mailing was conducted; however, the final survey was not recovered.

#### Treatment of the Data

##### Obtained from the Instrument

Of eight forms distributed, seven principals responded to the survey for a response rate of 88 percent. The results were hand-tabulated and presented as numerical data. The data collected by this survey were presented using graphic and narrative formats.

## CHAPTER IV

### Results of the Study

Data presented and analyzed in Chapter IV have been organized in four sections listed below to correspond with the major components of the survey instrument used in the study:

1. Uses of the computer in educational administration.
2. Effectiveness of computers at accomplishing selected administrative tasks.
3. Identification of individuals who operated the computers for selected administrative tasks.
4. Reasons principals used computers in the administration of their buildings.

Analysis and discussion of the findings produced as a result of this study have been presented in narrative and graphic formats on the following pages. With the exception of ranking reasons principals used computers in the administration of their buildings, the responses on the survey instrument were tabulated on a percentage basis.

Principals' Responses Related to the Uses  
of Computers in Educational Administration

A summary of responses of high school principals in Washington State's Mid-Valley AA League regarding specific uses of computers as applied to educational administration has been presented in Table 1. The specific uses of computers included the following:

1. Class Scheduling
2. Student Records
3. Word Processing
4. Attendance
5. Budgeting
6. Inventory Management
7. Grade Reporting
8. Test Scoring.

Seven respondents (100 percent) reported that the computer was applied to student records, word processing, attendance tracking, and grade reporting. Six of the seven respondents (86 percent) utilized computers for class scheduling; four respondents (57 percent) applied the computer to budgeting; inventory management was reported by three respondents (43 percent) as a computer application; and one of the seven respondents (14 percent) utilized computers for test scoring. One respondent (14 percent) included electronic mail as an administrative use of the computer not included on the survey instrument.

In the analysis of data presented in Table 1, it was observed that all seven respondents (100 percent) applied the computer to five or more of the eight administrative applications listed on the survey instrument, and five respondents (71 percent) reported that six or more administrative tasks were performed on the computer. One possible conclusion that may be drawn from this information is that aspiring school administrators be provided training in these types of computer applications as a part of their preparation for administrative certificates.

---

TABLE 1

Frequency (f) and Percentage (%) of Principals  
Who Used Computers for Specific  
Administrative Tasks

<u>Computer Application</u>	<u>f</u>	<u>%</u>
Student Records	7	100
Word Processing	7	100
Attendance	7	100
Grade Reporting	7	100
Class Scheduling	6	86
Budgeting	4	57
Inventory Management	3	43
Test Scoring	1	14

---

Principals' Responses Related  
to the Effectiveness of Computers  
at Accomplishing Specific Administrative Tasks

Table 2 has summarized the perceptions of respondents regarding the effectiveness of computers at accomplishing specific administrative tasks. Respondents were asked if each task was accomplished:

1. Less effectively with a computer.
2. As effectively with a computer.
3. Somewhat more effectively with a computer.
4. Much more effectively with a computer.

Five of the six respondents (83 percent) who applied the computer to class scheduling reported that this task was accomplished much more effectively with a computer. One respondent (14 percent) reported that class scheduling was accomplished as effectively with a computer.

Six of the seven respondents (86 percent) who applied the computer to student recordkeeping indicated that this task was accomplished much more effectively with a computer. One respondent (14 percent) reported that this task was accomplished as effectively with a computer.

Six of the seven respondents (86 percent) who applied the computer to word processing indicated that this task was accomplished much more effectively with a computer. One respondent (14 percent) reported that the task was accomplished somewhat more effectively with a computer.

Of the seven respondents who applied the computer to attendance tracking, four (57 percent) reported that this task was accomplished much more effectively with a computer; two respondents (29 percent) indicated that this task was accomplished somewhat more effectively with a computer; and one respondent (14 percent) indicated that attendance tracking was accomplished as effectively with a computer.

Three of the four respondents (75 percent) who used the computer for budgeting reported that this task was accomplished much more effectively with a computer. One respondent (25 percent) indicated that this task was accomplished as effectively with a computer.

Two of the three respondents (67 percent) who applied the computer to inventory management reported that this task was accomplished much more effectively with a computer. One respondent (33 percent) indicated that this task was accomplished somewhat more effectively with a computer.

Of the seven respondents who applied the computer to grade reporting, six (86 percent) reported that this task was accomplished much more effectively with a computer. One respondent (14 percent) indicated that this task was accomplished somewhat more effectively with a computer.

Of the seven respondents, one cited test scoring as a computer application and reported that this task was accomplished much more effectively with a computer.

In the analysis of data presented in Table 2, it was observed that the majority of respondents perceived selected administrative tasks were accomplished much more effectively with a computer. Fifty-seven percent or more of the respondents who used the computer for specified administrative tasks perceived that all eight of these applications were accomplished much more effectively utilizing the computer. Eighty-three percent or more of the respondents who used the computer for administrative tasks perceived that five or more of the eight specified tasks were accomplished much more effectively using a computer. One possible conclusion that may be drawn from this information is that school principals who do not use computers in the administration of their buildings should consider implementing computer technology as a means to more effectively manage their schools.

TABLE 2  
Frequency (f) and Percentage (%) of  
Responses Regarding the Effectiveness of Computers  
at Accomplishing Specific Administrative tasks

<u>Computer Application</u>		<u>Computer Effectiveness</u>			
		<u>Not As Effective</u>	<u>As Effective</u>	<u>More Effective</u>	<u>Much More Effective</u>
Class Scheduling	(f)	0	1	0	5
	(%)	0	17	0	83
Student Records	(f)	0	1	0	6
	(%)	0	14	0	86
Word Processing	(f)	0	0	1	6
	(%)	0	0	14	86
Attendance	(f)	0	1	2	4
	(%)	0	14	29	57
Budgeting	(f)	0	1	0	3
	(%)	0	25	0	75
Inventory Management	(f)	0	0	1	2
	(%)	0	0	33	67
Grade Reporting	(f)	0	0	1	6
	(%)	0	0	14	86
Test Scoring	(f)	0	0	0	1
	(%)	0	0	0	100

Principals' Responses Related to  
Identification of Individuals Who Operated the  
Computer for Selected Administrative Tasks

A summary of principals' responses regarding the individuals who actually stored information on or accessed information from the computer while performing selected administrative tasks has been presented in Table 3.

Respondents selected from the following:

1. Building Principal
2. Building Secretary/Other Office Staff
3. Guidance Counselor/Staff

In most instances, more than one of the possible responses was selected indicating that two or more individuals were responsible for performing the specified administrative task on the computer. For this reason, the sum of the percentages presented in Table 3 was not 100 percent.

For example, two of the six respondents (33 percent) who used the computer for class scheduling reported that the building principal operated the computer for this task; three (50 percent) indicated building secretary/other office staff; and five (83 percent) indicated guidance counselor/staff. However, only one of the six respondents reported that the principal alone accomplished class scheduling on the computer; three reported that the guidance counselor/staff was solely responsible for the task; one indicated that both the building secretary and guidance staff performed the task;

and one respondent reported that the building principal, building secretary, and guidance staff used the computer for class scheduling.

Three of the seven respondents (43 percent) who used the computer for student records indicated that the building principal operated the computer for this task; six (86 percent) identified the building secretary/other office staff; and six (86 percent) indicated guidance counselor/staff. One respondent reported that the building secretary/other office staff was solely responsible for computerized student records; one indicated only guidance counselor/staff; two respondents indicated both building secretary/other office staff and guidance counselor/staff; and three respondents reported all three of the possible responses.

Four of the seven respondents (57 percent) who used the computer for word processing reported that the building principal operated the computer for this task; seven (100 percent) indicated building secretary/other office staff; and six (86 percent) identified the guidance counselor/staff. Only one respondent reported that the building secretary/other office staff was solely responsible for word processing. Two respondents reported that both the building secretary/other office staff and guidance counselor/staff were involved in word processing. Four of the seven

respondents indicated that all three; building principal, building secretary/other office staff, and guidance counselor/staff; were involved in word processing.

Of seven respondents, one (14 percent) reported that the building principal operated the computer for attendance tracking, seven (100 percent) identified the building secretary/other office staff, and one (14 percent) indicated guidance counselor/staff. Five of the seven respondents reported that the building secretary/other office staff was solely responsible for this task; one indicated both principal and building secretary/other office staff; and one identified both the building secretary/other office staff and guidance counselor/staff.

Two of the four respondents (50 percent) who used the computer for budgeting reported that the principal operated the computer for this task. Three respondents (75 percent) indicated that the building secretary/other office staff applied the computer to budgeting. One respondent reported that the building principal alone was responsible for computerized budgeting; two indicated that the building secretary/other office staff was solely responsible; and one identified both the building principal and building secretary/other office staff.

Of the three respondents who used the computer for inventory management, all three (100 percent) reported that the building secretary was solely responsible for this task.

Two of the seven respondents (29 percent) who used the computer for grade reporting said that the building principal operated the computer for this task; four (57 percent) indicated building secretary/other office staff; and six (86 percent) identified the guidance counselor/staff. Of the seven respondents, one reported that the building secretary/other office staff was solely responsible for computerized grade reporting; three indicated only guidance counselor/staff; one identified both the building secretary/other office staff; and two reported that the building principal, building secretary/other office staff, and guidance counselor/staff all used the computer for grade reporting.

Only one of the seven respondents reported using the computer for test scoring. Both the building secretary/other office staff and the guidance counselor/staff were responsible for this task.

In the analysis of data presented in Table 3, it was observed that building secretaries/other office staff operated the computer more than building principals and guidance counselors/staff for the majority of administrative applications. Guidance counselors/staff operated the computer more than building principals for the majority of the administrative applications. Of the three; building principals, building secretaries/other office staff, and guidance counselor/staff; the building principal operated the computer for the least number of administrative applications.

TABLE 3  
Frequency (f) and Percentage (%) of Responses  
Regarding Individuals Who Operated The Computer for  
Selected Administrative Tasks

<u>Computer Application</u>		<u>Computer Operator</u>		
		<u>Building Principal</u>	<u>Building Secretary</u>	<u>Guidance Counselor</u>
Class Scheduling	(f)	2	3	5
	(%)	33	50	83
Student Records	(f)	3	6	6
	(%)	43	86	86
Word Processing	(f)	4	7	6
	(%)	57	100	86
Attendance	(f)	1	7	1
	(%)	14	100	14
Budgeting	(f)	2	3	0
	(%)	50	75	0
Inventory Management	(f)	0	3	0
	(%)	0	100	0
Grade Reporting	(f)	2	4	6
	(%)	29	57	86
Test Scoring	(f)	0	1	1
	(%)	0	100	100

Principals' Responses Related to the  
Reasons Computers Were Used in the  
Administration of Their Buildings

A summary of responses regarding the reasons principals used computers in the administration of their buildings has been presented in Table 4. Respondents were asked to rank the following in order of importance:

1. Time saved in handling administrative tasks.
2. Allows time for more meaningful tasks such as educational leadership and human resource management.
3. The accuracy of information accessed.
4. The ease with which information is accessed.
5. Other.

Respondents were asked to rank the above reasons using the number 1 for the most important reason and the number 5 for the least important reason. The rankings were totaled, and average rankings were presented in Table 2. No respondents selected the response category "other," therefore, average rankings were based on individual ranks of 1 through 4.

The average rank for the time saved in handling administrative tasks was 2.3. Two respondents ranked this reason as most important, or number 1; one respondent indicated number 2; and four respondents indicated number 3.

The ease with which information was accessed also had an average rank of 2.3. Two respondents ranked this reason as number 1; three ranked this response number 2; and two indicated number 4. The time saved in handling administrative tasks and the ease with which information is accessed ranked most important according to average rankings.

"Allows time for more meaningful tasks..." had an average rank of 2.6. Three respondents ranked this reason as most important, or number 1; one respondent ranked this reason number 3; and three respondents indicated number 4.

The average rank for the accuracy of information accessed was 2.9 and, with the exception of the response category "other," ranked least important. Three respondents ranked this reason number 2; two ranked this response number 3; and two indicated number 4.

In the analysis of data presented in Table 4, it was observed that the ease with which information is accessed, with an average rank of 2.3, and the time saved in handling administrative tasks, with an average rank of 2.3, were the most important reasons high school principals in the Mid-Valley AA League used computers in the administration of their buildings. The least important reason cited, with an average rank of 2.9, was the accuracy of information accessed.

TABLE 4

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Rank of Response Regarding the  
Reasons Principals Used Computers in  
the Administration of Their Buildings

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<u>Reason for Computer Use</u>	<u>Average Rank</u>
1. Time saved in handling administrative tasks.	2.3
2. Ease with which information is accessed.	2.3
3. Allows time for more meaningful tasks.	2.6
4. Accuracy of information accessed.	2.9

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## CHAPTER V

### Summary, Conclusions, and Recommendations

#### Summary

Today's school administrator has found that computer technology has been a viable answer to the challenges of managing schools. In light of bureaucratic requirements and a lack of administrative support personnel, the computer may be of particular importance in answering these challenges.

The purpose of this study was to assess the uses and effectiveness of computers in educational administration. To effect this purpose, a survey instrument which addressed the uses and effectiveness of computers in educational administration was developed.

The survey instrument was mailed to practicing high school principals in Washington State's Mid-Valley AA League. Respondents were asked to report which of eight selected administrative tasks were applied to the computer in the administration of their buildings; perceptions regarding the effectiveness of computers at accomplishing administrative tasks; identification of individuals who actually operated

the computer for administrative tasks; and the major reasons computers have been used in the administration of their buildings.

With the exception of ranking responses regarding the reasons respondents used computers in the administration of their buildings, survey responses were tabulated by frequency and percentage. An analysis was made of the data obtained.

### Major Findings

The findings of the study have been presented in the following sections which correspond to the four categories used in the survey instrument:

1. Uses of the computer in educational administration.
2. The effectiveness of computers at accomplishing selected administrative tasks.
3. Identification of individuals who operated the computer for selected administrative tasks.
4. Reasons principals used computers in the administration of their buildings.

### Uses of the Computer in Educational Administration

When asked to indicate which of eight administrative tasks were applied to the computer, a majority of the respondents identified the following:

1. Class Scheduling
2. Student Records

3. Word Processing
4. Attendance Tracking
5. Budgeting
6. Grade Reporting

All respondents (100 percent) utilized computers for keeping student records, word processing, attendance tracking, and grade reporting; 86 percent applied class scheduling to the computer; and 57 percent accomplished budgeting by computer.

Less than 50 percent of the respondents identified the following as administrative computer applications:

7. Inventory Management
8. Test Scoring.

Forty-three percent of the respondents reported that inventory management was accomplished using the computer. Test scoring was reported by 14 percent of the respondents as a computer application.

#### The Effectiveness of Computers at Accomplishing Selected Administrative Tasks

When indicating how effectively they believed computers accomplished administrative tasks, from 83 to 100 percent of the respondents who applied the computer to specified tasks indicated that five of the eight selected administrative computer applications were accomplished much more effectively with the computer. The majority of respondents, from 57 to

100 percent, reported that all eight selected administrative tasks were accomplished much more effectively with a computer.

Identification of Individuals Who Operated  
the Computer for Selected Administrative Tasks

Building secretaries or other office staff used the computer more than building principals or guidance office staff for the majority of selected administrative applications. Building principals were least likely to operate the computer for the majority of selected administrative applications.

For all eight selected computer applications, from 50 to 100 percent of the respondents identified the building secretary/other office staff as a computer operator. For five computer applications, from 83 to 100 percent of the respondents identified the guidance counselor/staff as a computer operator. For only two of the selected administrative computer applications did 50 percent or more of the respondents identify the principal as a computer operator.

Reasons Principals Used Computers  
in the Administration of their Buildings

When asked to rank in importance reasons computers were used in the administration of their buildings, respondents reported the ease with which information is accessed

(average rank of 2.3) and the time saved in handling administrative tasks (average rank of 2.3) were perceived most important. The accuracy of information accessed (average rank of 2.9) was perceived least important.

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### Conclusions

The conclusions that have been drawn from this study are as follows:

1. The majority of high school principals in Washington State's Mid-Valley AA League have utilized the computer for common administrative applications.
2. These principals have found that administrative tasks applied to the computer have been accomplished much more effectively.
3. The principal has not been the primary individual operating the computer for the purpose of accomplishing administrative tasks. More often, principals have interacted with the computer through intermediaries such as the building secretary or guidance counselor.
4. The ease with which information is accessed and the time saved in handling administrative tasks have been the primary benefits principals have realized through computer use in their buildings.

### Recommendations

From the findings and conclusions produced from the present study, the following recommendations have been made:

1. That colleges and universities with administrator preparation programs develop training programs involving the application of computer technologies in educational administration.
2. That more comprehensive studies be conducted so that results might serve as a basis for the design and implementation of computer training programs for aspiring administrators.
3. Additional study could be undertaken in an attempt to show a relationship between computer use and principal/school effectiveness.
4. Further study could be limited in scope to the relationship between the direct operation of computers by educational administrators and perceptions of computer effectiveness.
5. Finally, school districts should provide inservice training in an effort to expand computer use by current building administrators and to update administrators on the availability of technologies useful in managing schools.

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Appendix A

Cover Letter for  
Survey Questionnaire

## A SURVEY ON

### THE USES AND EFFECTIVENESS OF COMPUTERS IN EDUCATIONAL ADMINISTRATION

Dear Colleague,

I am conducting a questionnaire study, in cooperation with Central Washington University, to determine the uses and effectiveness of computers in educational administration. This study is being conducted in partial fulfillment of the requirements for the Master of Education in Educational Administration.

Your response, as a principal in a Mid-Valley 'AA' league high school, will be extremely valuable. Responses will be treated as confidential and under no circumstances will individuals or schools be identified. Please feel free to make any additional comments which you believe would be beneficial.

Thank you for your cooperation. Enclosed is a stamped, self-addressed envelope for your convenience in returning the survey as soon as possible.

Sincerely,

Graduate Student: Steven W. Warren

University Supervisor: Dr. Jack McPherson  
Department of Education  
Central Washington University  
Ellensburg, WA 98926

Comments:

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Please note: An address was redacted due to privacy concerns.

**Appendix B**

**Survey Instrument**

DIRECTIONS: PLEASE INDICATE HOW COMPUTERS ARE USED IN YOUR BUILDING BY PLACING A CHECK IN THE APPROPRIATE SPACES PROVIDED.

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

I. CLASS SCHEDULING?  YES  
 NO (IF NO, GO TO QUESTION II)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

II. STUDENT RECORDS?  YES  
 NO (IF NO, GO TO QUESTION III)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

III. WORD PROCESSING?  YES  
 NO (IF NO, GO TO QUESTION IV)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

IV. ATTENDANCE?  YES  
 NO (IF NO, GO TO QUESTION V)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

V. BUDGETING?  YES  
 NO (IF NO, GO TO QUESTION VI)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

VI. INVENTORY MANAGEMENT?  YES  
 NO (IF NO, GO TO QUESTION VII)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL  
 B. BUILDING SECRETARY/OTHER OFFICE STAFF  
 C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER  
 B. AS EFFECTIVELY WITH A COMPUTER  
 C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER  
 D. MUCH MORE EFFECTIVELY WITH A COMPUTER IN

YOUR BUILDING, ARE COMPUTERS USED FOR...

VII. GRADE REPORTING?  YES  
 NO (IF NO, GO TO QUESTION VIII)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL
- B. BUILDING SECRETARY/OTHER OFFICE STAFF
- C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER
- B. AS EFFECTIVELY WITH A COMPUTER
- C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER
- D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IN YOUR BUILDING, ARE COMPUTERS USED FOR...

VIII. TEST SCORING?  YES  
 NO (IF NO, GO TO QUESTION IX)

1. INDIVIDUALS WHO OPERATE THE COMPUTER FOR THIS TASK ARE:

- A. BUILDING PRINCIPAL
- B. BUILDING SECRETARY/OTHER OFFICE STAFF
- C. GUIDANCE COUNSELOR/STAFF

2. THIS TASK IS ACCOMPLISHED:

- A. LESS EFFECTIVELY WITH A COMPUTER
- B. AS EFFECTIVELY WITH COMPUTER
- C. SOMEWHAT MORE EFFECTIVELY WITH A COMPUTER
- D. MUCH MORE EFFECTIVELY WITH A COMPUTER

IX. IN ADDITION, PLEASE INDICATE BELOW THE REASONS COMPUTERS ARE USED IN THE ADMINISTRATION OF YOUR BUILDING. RANK THE FOLLOWING REASONS IN ORDER OF IMPORTANCE (1 BEING MOST IMPORTANT, 5 LEAST IMPORTANT).

- A. TIME IS SAVED IN HANDLING ADMINISTRATIVE TASKS
- B. ALLOWS TIME FOR MORE MEANINGFUL TASKS SUCH AS EDUCATIONAL LEADERSHIP, HUMAN RESOURCE MANAGEMENT, ETC...
- C. ACCURACY OF INFORMATION ACCESSED
- D. EASE WITH WHICH INFORMATION IS ACCESSED.
- E. OTHER (EXPLAIN)

X. IF TASKS OTHER THAN THOSE LISTED ABOVE UTILIZE COMPUTERS IN THE ADMINISTRATION OF YOUR BUILDING, PLEASE SPECIFY THEM BELOW:

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