A STUDY OF THE PERCEPTIONS OF ELEMENTARY SCHOOL PRINCIPALS FROM ONE SCHOOL DIVISION REGARDING THE SKILLS AND KNOWLEDGE OF COMPUTER TECHNOLOGY CRITICAL TO THEIR JOB PERFORMANCE

by

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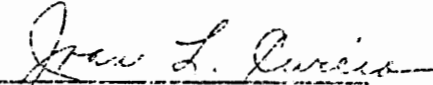in partial fulfillment of the requirements for the degree of

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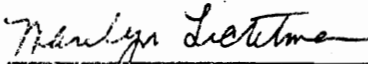
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(ABSTRACT)

The purpose of this study was to determine what elementary principals perceive as important to performing their jobs in three areas: understanding student learning as it relates to computer technology use, decision making related to computer technology implementation and personal computer applications.

Descriptive research methodology was used in the study. The population surveyed included 147 elementary principals in a large suburban school district located in the Washington, D.C. metropolitan area. Their schools were diverse in terms of size, demographics, and computer technology capabilities. One hundred twenty-seven surveys were returned, representing a response rate of 86%.

The principals who responded registered the highest measure of agreement on the statements that addressed computer applications and student

learning. There was less agreement regarding whom principals rely on when making decisions on computer technology implementation. However, respondents all agreed that they should know which key personnel to contact when making decisions particularly about the purchase of hardware and software. There was also solid agreement among the respondents that there should be a designated technology position in every school.

The role of principal as it relates to computer technology implementation was not clearly defined by the respondents. Some principals felt it was important to model computer technology applications while others did not think that the principal was the most important person to facilitate an environment that supports technology.

Finally, the area that received the most discrepancy in responses addressed personal productivity. There is not agreement among elementary principals as to what they should know and use regarding computer applications. All respondents, however, said that they were willing to participate in staff development designed to enhance their administrative roles.

ACKNOWLEDGMENTS

someplace other than home. His assistance allowed our family life to continue even when I was unable to lend a hand. His encouragement never faded.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Educators of the 21st century must be aware of and able to utilize a variety of emerging computer-based applications. Computer technology can provide ready access to information and communication. Thanks to an array of new electronic tools, principals today are no longer chained to an office or school building asserts Roberts (1997). Instead of writing reports in longhand on yellow legal pads, they can prepare documents on laptop computers at home, or anywhere, and transmit them electronically to distant printers or computers. They can access the Internet, make video presentations, work on databases and spreadsheets, and access information from around the world. For the purpose of their own work they need to identify exactly what computer applications facilitate productivity, locate avenues to learn these applications, and apply the practice required to become proficient in these applications. They must have the necessary knowledge of technology to make appropriate schoolwide purchasing decisions. According to Gigli (1997) a principal must not only understand the need for upgrading the school's infrastructure, but how to go about

1

doing it as well. While many of the tasks can be delegated, a principal needs at least a general understanding of the network components and their impact on staff and students.

Principals must be able to articulate district policy regarding the use of computers specifically in using the internet, security measures, site licensing and ethics. Finally, Peck and Dorricott (1994) maintain that as instructional leaders principals need to be able to evaluate if technology is being used as a tool that is integrated across the curriculum and contributing to a more powerful educational experience.

The use of computers varies considerably among school administrators. In a study by Crouse (1994) on school administrators and the use of administrative computer networks, he found nationwide preparation is not meeting the needs of school administrators in an area of computer technology and information management. Staff development classes, adult education, and coursework in preparation programs provide opportunities to learn technical skills, but a gap exists between this learning and application to the administrator's work.

Riggs (1993) surveyed principals in Indiana and determined that a positive attitude and formal and informal training lead to high computer

adoption levels by administrators. The alignment of education and training with the competency requirements of school leaders is critical.

Principals nationwide face the problem of diminishing resources. That necessitates working more efficiently. As instructional leaders, principals must be knowledgeable across a broad range of disciplines and curricular areas, in addition to understanding the different developmental needs of students, in order to ensure that teaching materials complement instructional goals and philosophies according to Lewis (1995). Principals need to understand and employ technology in order to successfully manage the increasingly complex school environment, to model technology as an instructional tool, and to see that students have the opportunity to learn technology skills.

Justification for the Study

Personal usage of computer technology can increase proficiency in specific tasks as well as allow the school leader to model the use of computers. Since the realm of applications is so vast, it is necessary to identify specific applications that are most beneficial to elementary school principals. By identifying these, administrators can then focus on the

necessary training needed to facilitate their own practice of computer usage.

Principals are faced daily with decisions related to the purchase of hardware and software for schools. These decisions, if not founded on a basic knowledge of the needs of a school, can become costly errors. While assistance from technology specialists is sometimes available, it is the responsibility of the school leader to approve expensive purchases. It is imperative for those decision makers to understand the reasons for making selections that will impact the instructional programs of their schools. As the instructional leader, the elementary school principal should be able to articulate the intent of various technology practices and be able to identify when those practices are being utilized in the classroom.

Purpose of the Study

The purpose of this study is to determine what elementary school principals perceive as important to perform their jobs in three areas: understanding student learning as it relates to computer technology use,

4

decision making related to computer technology implementation and personal computer applications.

If principals are to be knowledgeable and effective leaders with respect to computer technology, principals must become proficient in using computers and fully aware of their potential suggests Vann (1997). Renyi (1997) further elaborates by stating that when a school gets new technology, the principal may be pressured by businesses and parents to start using right away. Principals in that situation must make sure everyone understands that staff development in technology must precede student use.

As instructional technology moves forward in classroom applications, elementary principals must know if these applications are matching the needs of students. In facilitating opportunities for staff training, principals need to make recommendations that are educationally sound and support student learning. Teachers, after discovering new and exciting ways to use technology, will become knowledgeable enthusiasts. Principals must keep academic goals clear while providing support and encouragement for the staff.

Given the wide range of responsibilities facing elementary school principals, it is paramount that specific knowledge and skills be identified in order that principal preparation programs and local school divisions can plan coursework and training to match the needs of school leaders.

Research Questions

The following questions were developed to guide the study:

1. What do elementary principals perceive as important to know about computer applications and student learning?

2. Do elementary principals rely on others when making decisions about computer technology implementation?

3. What do elementary principals perceive as important for them to be able to accomplish regarding computer applications and their own productivity?

Definitions

The following definitions apply to terms used in this study:

6

LAN - Local area network. The linkage of computers and/or peripherals (e.g., printer) confined to a limited area, usually less than two miles, that allows users to communicate and share information.

Site license - License to use software within a facility. It provides authorization to make copies and distribute them within a specific jurisdiction or run a program simultaneously with multiple users on a network.

Internet - A vast international collection of networks enabling computers to communicate text and graphic information over a global seamless system.

E-mail - Electronic mail. Transmission of memos and messages over a network.

Bulletin boards - Provide access to forums for general information sharing.

LSIS - Local Student Information System.

Limitations

This study is limited to one school division in Virginia. All respondents were elementary school principals and their responses may

not reflect administrators at the middle and high school levels. Data collected was self reported. Even with the limitations of studying one school division, the data collected can be useful in designing staff development plans for practicing administrators or principal preparation coursework at the university level.

Summary

A description of the problem to be studied was presented in this chapter. Elementary school principals play a critical role in implementing and facilitating computer technology applications in schools. Their own knowledge base and skills must be current in order to make school wide decisions that move staff and students forward in this ever-changing arena.

Chapter 2 contains a review of the literature relevant to computer technology and the school administrator. Chapter 3 includes a description of the methodology. A description of the design of the study and the procedures used will also be included. The findings of the study are presented in Chapter 4, and the conclusions and recommendations of the investigator are reviewed in Chapter 5.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this chapter is to present a review of the literature about school administrators and their personal use of computer technology as well as their role in promoting computer initiatives in their schools. A discussion of the current status of computer use in elementary schools as well as a brief history of this movement is included.

Current Use and Effectiveness of Computers in Schools ✓

Dwyer (1995) asserted that over the past century society has changed from local communications to global communications, from local markets to global markets, and from unsophisticated to sophisticated technologies. Education and training should reflect society and therefore technology must become part of the learning process in schools.

Withrow (1990) reported that in the 1980's, we saw a remarkable change in the educational technology resources available to students and teachers. The Office of Technology Assessment (1988) estimated there were 10,000 pieces of software available for elementary and secondary

9

education then. There was one computer for every 30 students. Presently, some 2 million computers can be found in classrooms.

In 1994, the Goals 2000: Educate America Act directed the Secretary of the United States Department of Education to develop a national long-range technology plan for actions promoting higher student achievement through the use of technology in education according to Glennan and Melmed (1996). The growth in technology by some schools was strong and expected to continue. Glennan and Melmed noted, however, that research showed the average schools still make limited use of computers. They also observed that the use of technology to significantly affect classroom practice tended to be limited to small groups of teachers. Research and observations of experts suggested that teachers must acquire new skills to operate in technology-rich environments.

Harrington-Lueker (1996) cited from *Teachers and Technology: Making the Connection,* a 1995 report from Congress's now disbanded Office of Technology Assessment (OTA), that U.S. schools spend an average of 55 percent of their technology budgets on hardware and 30 percent on software. Unfortunately only 15 percent of technology budgets are being spent on staff development and training. Why do schools

10

continue to commit so little to technology training? The explanations are many. "People pay certain lip service to professional development, but they then get into a frenzy of buying equipment and dumping it at the schoolhouse door," said Frank Withrow, director of learning technologies at the Washington, D.C. based Council of Chief State School Officers as recounted by Harrington-Lueker (1996).

Bozeman, Raucher, and Spuck (1991) suggested that perhaps nowhere has the disparity between school districts been more pronounced than in the use of technology for both administration and instruction. School districts in the United States have considerable autonomy. As a result their individual paths in the development and implementation of technology have varied considerably. As a result of Goals 2000, many states accepted the challenge of creating plans and goals that would support their schools while adhering to the national recommendations. In February 1994, the Virginia Department of Education developed a second Six-Year Educational Technology Plan. Educators in Virginia were challenged to prepare students to lead productive lives in the 21st century in a society where expanding technology redefines how people will learn, work, and play (Virginia Department of Education, 1996). Elementary

11

school principals will play a key role in identifying solutions to meet the technological needs in education.

Leadership Practices

According to Sergiovanni (1996), at the root of school leadership is a commitment to administer the needs of the school as an institution by serving its purposes and by acting as guardians to protect the institutional integrity of the school. In identifying tasks that principals need to perform Sergiovanni included motivating, explaining, enabling and modeling. In fostering computer use among staff and students, these tasks are essential to improve the situation.

Kearsley (1990) maintained that educational administrators typically wear three hats: leader, manager, and politician. In the context of computers, these three roles relate to different responsibilities, according to Kearsley. The leadership role requires motivating others to embrace computer technology and to removing obstacles to computer use. As a manager, Kearsley suggested that it is necessary to identify how computers can improve efficiency of school operations. Politically the

administrator must promote computer use so that it serves the interests and needs of all school constituents.

The elementary school principal is responsible for obtaining the hardware and software, training staff, and evaluating teacher and student practice while monitoring student achievement. Levinson (1993) proclaimed that the principal is responsible for managing the complexities of technology-based change. Administrators must understand both the capabilities and limitations of technology according to Mecklenburger (1989). He suggested that only then can they (administrators) plan for, budget for, purchase carefully, install properly, maintain dutifully, schedule adequately, distribute appropriately, and replace systematically the electronic technology best suited for their needs.

Jackson (1996) described the relationship between leadership practices and concerns in the integration of computers in the instructional program in urban elementary schools. She found that there was a high level of concern among principals as change facilitators. Teachers showed a high level of concern as innovation users. Principals in the study revealed a moderate level of leadership on four dimensions (challenging

13

the process, enabling other to act, modeling the way, and encouraging) but strong leadership behavior on inspiring a shared vision.

McKenzie (1993) observed that school administrators play a critically important role in developing successful technology programs. The administrator employs the tools of organizational development to identify and initiate the cultural changes that are required to support innovative thinking. The task before the administrator is to support the staff so that schools are in a state of constant renewal, change, and growth. Cannings and McManus (1987) stated that the principal is key in that change. The principal must communicate the importance of computer education and actively support it. However, technology initiatives often require support from administrators who have minimal personal experience with computers and limited knowledge of expected outcomes for students. According to Davidson and Maurer (1995) to create the principal's role in promoting technology, administrators must first understand the capabilities and possibilities of technology. They must recognize the connection between what happens instructionally and what happens technologically to inspire teaching and learning.

The potential for technologies to enhance classroom instruction and school administration is widespread, but the majority of schools have yet to implement technologies beyond a basic level. Ritchie (1996) reported that the reasons for this reluctance are varied, but often included a lack of support from school administrators. He summarized that the Office of Technology Assessment had found that administrators who were informed and comfortable with technology became key players in leading and supporting technology in their schools.

Most administrators gained their technology experience through self-instruction, vendors, school personnel, consultants, or external courses according to Rockman and Sloan (1993). Of the five methods, Rockman and Sloan found structured courses designed for school administrators to be the most effective, unbiased, and comprehensive.

As school districts across the country continue the integration of this new technology into the educational process, school administrators, educational leaders, and decision-makers cannot disregard the potential for fear, an anxiety that many teachers share, regarding integrating computers and similar technology within their teaching program as reported by Honeyman and White (1987). The best planning resulted from a

15

collaborative approach involving all key stakeholders. Principals must create an organizational culture and delivery system committed to adult learning and staff development. In a report by Steinhaus (1991) that presented the findings and conclusions of a study of educational technology in New Mexico schools, it was determined that along with the school principal, individual teachers and school and district committees had the most influence in making decisions about educational technology applications.

Adams and Bailey (1993) advised that to prepare students for the future, educators must reexamine their approach to this point and look far into the future. They must develop instructional models while making decisions about equipment, finances, staff development, and maintenance that reflect the future needs of students.

Polin stated that successful transitions occur when leaders articulate and share vision; exemplify the change through example; and educate, support, empower, and share decision making and leadership with faculty and staff. Furthermore, Polin suggested that as these strategies are implemented, the incorporation of technology often progresses to a point where a critical mass of teachers, technologies, and activities combine to

16

form a climate in which technology becomes a part of life, and ideas for integrating technologies into the curriculum become more spontaneous.

Effective principals can define and communicate a mission that incorporates information literacy and technology integration. Niederhauser (1996) maintained supporting teachers through professional development and ongoing technical support can produce the kinds of change that will help our children become productive participants in the information society.

In the Education Technology Survey (1995) sponsored by the American Association of School Administrators, Cable in the Classroom, National Association of Elementary School Principals, National Association of Secondary Principals and the National Education Association, it was determined that administrators and principals tended to underestimate the extent to which teachers and media coordinators were using electronic services. More importantly, however, this report indicated that the barriers to greater use included lack of training and workshops and lack of time to learn how to employ new computer applications.

Administrative Attitudes Toward Computers

According to Lambert (1995), educational leaders need to be at ease in the use and application of computers in personal and professional settings. This skill is fast becoming a prerequisite to professional preparation. There are practicing administrators who did not have the benefit of professional preparation in technology as part of their administrative training, yet need to acquire the necessary skills for their own productivity, their role as evaluators of teachers and as program managers making critical financial decisions.

In a study on the attitudinal and demographic factors influencing the adoption of computer technology by school principals, Coutts (1995) found that computer usefulness and low computer anxiety were related to the likelihood that principals will adopt. Principals had adopted computers as personal productivity tools. The most frequently used software application was word processing. Coutts also found that there was a relationship between those principals who are not afraid to use computers, and the likelihood that they will adopt them.

Cambre and Cook (1987) use the term "computer anxiety" and described the fear of using computers as measured by physiological

changes or responses on self-report instruments. Computer anxiety can include an array of emotional reactions such as fear, apprehension, hope, and personal threat. Computer anxiety can be relieved by becoming more comfortable using computers through positive computing experiences.

Bohlin (1993) reported reduced computer anxiety when the need to memorize procedural steps was reduced, and an increase in practice time with the computer was provided. Ritchie's (1996) findings in a study on school administrators' adoption of computers indicated that 1) high school principals had little or no formal university training in the use of computers, 2) a positive attitude must exist in order to adopt a new technology, 3) the number of computer units available to an administrator and the larger the number of students in the school have a positive effect on the administrator becoming a computer adopter, 4) the age, years of experience, geographic location, school corporation guidelines, state guidelines and social expectation of the community have no effect on the administrator's adoption level, 5) positive attitude and formal and informal training in computers lead to becoming comfortable with computers.

Tiede (1992) emphasized that the tasks that elementary school principals are expected to complete vary in number, variety and

19

complexity. Tasks could be divided between instructional and managerial. The computer has the ability to assist elementary school principals in performing their tasks more efficiently. Tiede found that those principals who identified themselves as "high-end" users tended to use computers for record keeping and correspondence and communications, followed by monitoring student achievement and other building management tasks. Most of the "high-end" user principals were self-taught in the use of computers. All respondents in the Tiede study indicated computers had significantly changed their professional lives.

Banks and Havice (1989) acknowledged that while it is true that computers are great time savers for a host of tasks, both in text and data processing, there is a necessity to spend a great amount of time learning to use a computer at the front end. Novice users often needed a lot of convincing that their time and frustrations at the beginning would yield benefits down the road. Many principals used a wide array of computer applications to perform daily administrative functions. But according to Cooper (1989), at the same time, other schools lag far behind the technology curve in making the best use of computers for administrative tasks. Cooper suggested that few schools are using the full potential of

computer technology to increase administrative efficiency and to enhance the educational process.

Duren (1994) examined the use of computer technology among practicing principals who had completed a course of study on computer applications. The findings of the study indicated that the computer training helped them become efficient in using computer technology for administrative purposes. The use of computers by principals have reduced workloads and helped them become more efficient.

Siegel (1995) claimed that principals are the primary gatekeepers to technology integration in schools. He reports that in a 1993 Electronic Learning Magazine survey 41% of the responding school districts did not offer technology training for principals. Of those that did offer training, 40% indicated that it was offered once a year or less. One reason school systems have not applied technology well is that few educators have actual personal experience with technology's advanced capabilities. Without the experience, they have had trouble developing a vision of how technology could be used to achieve the educational goals of the school.

In a study on the use of technology to improve educational administration Gentry (1994) showed evidence indicating that the school

division superintendent must be supportive of innovation but did not need to be the principle visionary or advocate. Gentry found that for successful implementation of technology in an organization, leaders played a strong role, one that promoted training opportunities designed to increase the capabilities of employees. Increasingly, the evidence pointed to the need for shared decision making and on-going training and practice to successfully integrate computer usage at both the instructional and administrative levels.

Principals as Program Managers

Siegel (1995) identified the principal as an important person in making decisions related to the purchase of technology. Principals were named as "always or mostly involved" with technology purchases. Do principals have the professional knowledge to make key technology decisions? Staff development programs for principals are few. Training tends to be on hardware and software with little attention focused on "big-picture" issues such as planning, budgeting, grant writing or retrofitting.

How can decision makers in education make the right technology choices when there are so many products to consider and so much

information. Cherry (1989) proposed that without enlightened principals and superintendents, capital expenditures for computers and telecommunications would not yield the desired results because the necessary curricular changes, teacher in-service training, and assessment would not take place. The influence of the principal in determining the success or failure of academic restructuring has been well documented.

To the administrator who must make decisions about CD-ROMs and disks; Macintoshes, DOS, and Windows; 486; LCD and ILS; not to mention Novell, fiberoptics, and multimedia integration the day becomes a never-ending stream of salespersons and teachers who want to sell more or to get more to do better according to Williams and Smith (1994). Those schools, districts, and administrators who succumbed to the pressure to introduce technology without first planning can count on a technological wasteland. Technology that does not promote good instruction and learning is worse than no technology at all.

Kirby (1994) suggested that technology plans are a good start toward resolving the problems caused by the haphazard purchase of equipment. He maintained that in the technology plan, schools must state

their vision and what they hope to achieve, including short- and long-term goals and objectives.

Summary

The review of the literature presented a brief description of the current use and effectiveness of computers in schools. There is an abundance of evidence that the amount of hardware, software and technological innovations continue to increase in schools across the country. The literature also revealed that while funding is being provided for hardware and software, significantly less emphasis has been placed on staff development efforts in terms of either financing or commitment of time.

A review of the literature also identified the school-based administrator as a key person in bringing about the necessary changes to initiate technology goals. The school leader must continue to perform the important tasks of motivating, explaining, enabling and modeling but often in an arena in which the leader has little experience or knowledge. While the research showed that there are insufficient opportunities for staff development for teachers, this is also the case with the practicing

24

administrator. Little attention has been placed on assisting principals in the following areas: obtaining the necessary knowledge and skills to make instructionally and fiscally sound decisions, learning applications to foster their own productivity, evaluating computer education programs in practice in classrooms.

The literature supported the theory that with additional learning sometimes there is an increased level of anxiety. Principals need to support their staff as they become new users of technology but at the same time must find ways in which their own learning curve can move forward. Most "high-end" users of technology are self-taught. The review of the literature revealed that there is minimal staff development being provided for administrators.

Finally, the literature identified the principal as an important decision maker in bringing technological change to schools. At the same time, there is much support for looking to other staff in a collaborative effort when developing technology plans and making critical decisions related to the integration of technology in instruction.

Lacking in the literature is the voice of school based administrators and their perceptions of their role in computer technology education.

Thus, this study attempts to fill that void by asking elementary school principals their knowledge and skills as it relates to computers in their schools, their own use of computers and their role in managing the responsibilities of short and long term computer technology planning.

CHAPTER 3

METHODOLOGY

The purpose of this chapter is to describe the research methodology used in the study, describe the population and instrumentation, explain the data collection procedures used, and furnish an explanation of the data analysis.

Research Methodology

Descriptive research methodology was used in this study. Descriptive research involves collecting data in order to test hypotheses or answer questions about the current status of the subject of the study according to Gay (1992). Best and Kahn (1986) defined descriptive research as *what is,* describing, recording, analyzing, and interpreting conditions that exist.

Van Dalen (1979) stated that researchers collect detailed descriptions of existing phenomena with the intent of employing the data to justify current conditions and practices or to make more intelligent plans for improving them. A high percentage of reported research studies

27

is descriptive in nature and the descriptive method is useful for investigating a variety of educational problems.

Descriptive survey procedures using a questionnaire are most appropriate to this study. Best and Kahn (1986) proposed that the survey method gathers data from a relatively large number of cases at a particular time. Gay (1992) agreed when he stated that school surveys can provide necessary and valuable information to both the schools and to other agencies and groups whose operations are school related.

Population

The population surveyed included all elementary principals in a large suburban school district. There were one hundred and forty-seven elementary principals. The schools were diverse in terms of size, demographics, and computer technology capabilities.

Instrumentation

Survey items were developed based on a review of the literature of other survey instruments on computers. Best and Kahn (1986) maintained that the questionnaire has unique advantages, and properly constructed and

28

administered, it may serve as an appropriate and useful data-gathering device. Guidelines for construction of the questionnaire included the following: 1) It was as short as possible, and only long enough to get the essential data, 2) It was attractive in appearance, 3) Each question dealt with a single item and was worded as simply and clearly as possible.

The initial survey was reviewed by a local school computer technology teacher. Suggested changes were implemented and the survey was then reviewed by a technology training specialist. The training specialist has experience and knowledge in both computer technology and school based administration. This individual serves as a computer technology specialist to a group of schools and is the technology expert in the central office. His input provided for additional modifications, deletions, and additions to the original set of questions.

A group of assistant principals at the elementary level was then given a draft of the questionnaire. In addition to completing the questionnaire, they were asked to respond to the following questions:

1. How long did it take to complete the survey?

2. Identify by number any items you felt were not clear and indicate why you believe that is so.

3. Identify by number any items you think should be deleted and indicate why they should be deleted.

4. Identify by number any items that you think should be modified and indicate why you think they should be modified.

5. Are there any items that should be added? Please list them.

Feedback from the assistant principals who participated in the pilot test was considered and the final draft of questions became the survey used in the research project.

Construction of the Questionnaire	
Step One	Reviewed by local school computer technology teacher
Step Two	Reviewed by central office computer technology specialist
Step Three	Pilot test of assistant principals
Step Four	Final draft of survey instrument based on input from those involved in Step One through Step Three

The questionnaire was designed to elicit responses that would determine what elementary school principals perceive as important to perform their jobs in three areas: understanding student learning as it relates to computer technology use, decision making related to computer technology implementation and personal computer applications.

Collection of Data

The survey with a cover letter (Appendix A) was sent to 147 elementary principals in the district. They were asked to complete the survey (Appendix B) and return it to the researcher in an enclosed postage paid envelope.

On February 1, 1997 the initial surveys were mailed. By February 15, 1997, 92 questionnaires had been returned. This represented a 62% return rate.

A follow-up reminder was sent on February 15, 1997 two weeks after the initial mailing (Appendix C). According to Dillman (1978) the purpose of this reminder is to jog memories and rearrange priorities. This reminder was sent to nonrespondents only. Six additional surveys were returned after the reminder was sent.

A follow-up letter, with another questionnaire enclosed, was sent on February 24, 1997 to those principals who did not respond (Appendix D). Questionnaires had identifying numbers in order to make it easier to send follow-ups. By March 7, 1997, an additional 29 questionnaires had been returned bringing the total number of survey instruments returned to 127. This represented an 86% return rate.

According to Gay (1992) research suggests that first mailings will typically result in close to a 50% return rate, and a second mailing will increase the percentage by about 20%: mailings beyond a second are generally not cost-effective, as they each increase the percentage by about only 10%.

Data Collection Procedures		
Initial Mailing	**Reminder**	**Second follow-up**
Cover letter and survey	2 weeks after initial mailing to nonrespondents	3 weeks after initial mailing, a second survey form mailed to nonrespondents

Method of Analysis

All of the questionnaires were examined to determine if they could be used in the final analysis. All questionnaires returned were used in reporting the results.

Descriptive analysis included reporting frequency counts and percentages for each question. Statistical analysis is computed and reported in Chapter 4. Summary conclusions and recommendations are included in Chapter 5.

Summary

The purpose of this chapter was to describe the research methodology, the population, and the survey instrument used in the study. Data collection procedures and the methods used to discuss the analyses of the data were also described.

CHAPTER 4

RESULTS

The purpose of this chapter is to describe the data that have been collected through the returned surveys. The data are presented by research questions, as described in Chapter 1.

Survey Response

The survey was mailed to 147 elementary principals. By the final due date, 127 surveys were returned. This represented a return rate of 86%. According to Gay (1992) first mailing will result in approximately a 50% return rate. The rate of return after the first mailing was 63%, representing 92 surveys. A factor in this high response rate might have been that the researcher stated in the cover letter that results would be reported in a newsletter of the local Association of Elementary School Principals, a publication received by all elementary principals. An additional factor may be that the researcher is an elementary school principal in the school division studied and a colleague of those surveyed.

Follow up procedures included sending a reminder letter and then mailing a second questionnaire to nonrespondents. This process increased the response rate by 19% to a final total of 86%.

Findings for each Research Question

What do elementary principals perceive as important for them to know regarding computer applications and student learning?

Data related to computer applications and student learning are displayed in Table 1 and Appendix E. Principals strongly agreed or agreed with four of the six questions associated with Research Question 1. Highest agreement (99%) was seen in the statement that indicated that principals should be able to discuss the advantages/disadvantages of having a computer lab versus computers in the classrooms. Only one principal disagreed with this statement. There was also strong agreement in a related statement when 99% of the principals felt that they should be able to discuss the advantages/disadvantages of having a local network (LAN) within a building.

Another 94% agreed or strongly agreed that the principal should be able to articulate division policy regarding student use of computers in

Table 1

Distribution of Respondents' Opinions Regarding Computer Applications and Student Learning

What do elementary principals perceive as important for them to know regarding computer applications and student learning?	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
(5) The principal should be able to discuss the advantages/disadvantages to having a computer lab versus computers in every classroom.	61	38		1
(6) The principal should be able to articulate division policy as it relates to computer usage, in such areas as: site licensing, Internet usage, and social and ethical issues.	45	50	5	1
(4) The principal should be able to discuss the advantages/disadvantages to having a local network (LAN) within a building.	43	56	2	
(1) The principal should be able to identify what principles of instruction are employed through the use of various software applications used by students.	44	50	6	
(3) The principal should be able to identify specific security systems and their functions as it relates to computer usage and students (Ex. Fire walls, At Ease, Fool Proof)	26	56	16	2
(2) The principal should be able to identify appropriate software at different grade levels.	19	65	15	1

Note. The numbers in parenthesis correspond to the questions on the survey.

such areas as site licensing, Internet usage and social and ethical issues. However, when asked if the principal should be able to identify specific security systems and their functions using examples of Fire Walls, At Ease and Fool Proof, only 82% of the respondents agreed or strongly agreed. Eighteen percent of the principals disagreed or strongly disagreed that the principal should be able to identify security systems.

In another statement that yielded strong agreement from respondents, 94% agreed or strongly agreed that they should be able to identify what principles of instruction are employed through the use of software applications used by students. However, the support for being able to identify appropriate software at different grade levels was not as strong. Only 19% of the principals strongly agreed while 65% agreed that they should be able to identify specific software while 15% disagreed or strongly disagreed with the statement.

Results of these data reveal that the majority of principals agree or strongly agree on issues related to computer applications and student learning.

Do elementary principals rely on others when making decisions related to computer technology implementation?

Data related to decision making and computer technology implementation is illustrated in Table 2 and Appendix F. The responses to the survey questions that focus on the issue of decision making produced a greater variety of opinions, with one exception. Question 13, out of all of the survey questions, had the highest number of respondents strongly agree (89%) that there should be a designated technology person at the building level who would be responsible for the day to day maintenance of hardware and/or management of the local network. Another topic that yielded strong agreement was addressed in Question 28. Ninety-nine percent of the principals either agreed or strongly agreed they must know key personnel to contact when making decisions related to purchasing of computer hardware and software.

There was less agreement on statements that emphasized the leadership role of the principal. The principal was considered to be the most important person to facilitate an environment that supports technology by 84% of the respondents. However, 16% of the principals strongly disagreed with that statement. Another 81% felt it was important

Table 2

Distribution of Respondents' Opinions on Who Principals Rely on When
Making Decisions Related to Computer Technology Implementation.

Do elementary principals rely on others when making decisions related to computer technology implementation?	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
(13) The principal should be assigned a designated technology position at the building level who would be responsible for the day to day maintenance of hardware and/or management of the local network.	89	7	3	1
(28) The principal must know which key personnel to contact to make decisions related to purchasing of computer hardware and software.	75	24	1	
(11) The principal should make recommendations to staff for professional development training as it related to acquisition of computer skills.	41	54	3	2
(8) The principal should know and understand computer technology issues well enough to discuss these independent of other school personnel.	38	54	8	1
(9) The principal is the most important person in facilitating an environment that supports technology.	47	37	16	
(12) The principal should have the knowledge base to make purchasing decisions regarding computer technology.	31	52	16	1
(10) The principal must model computer technology applications in order to move the staff forward in this area.	30	51	19	
(7) The principal should delegate the decisions related to computer technology to other school staff.	16	39	40	6

Note. The numbers in parenthesis correspond to the questions on the
survey.

for the principal to model computer technology but 19% of the principals strongly disagreed that to move the staff forward it was necessary for them to model computer technology applications.

Two survey questions addressed the decision making process. There were varied responses to both. More principals agreed or strongly agreed (83%) that they should have the knowledge base to make purchasing decisions regarding computer technology. However, 16% strongly disagreed with that statement.

Question 7 had the widest range of responses of any question on the entire survey. The statement suggested that principals should delegate computer technology decisions to other school staff. It also elicited the highest number of written comments by respondents. Eighteen principals wrote in a comment or word next to question 7. Words added were....**some of, depending on, may delegate, partly, ...**delegate the decisions related to computer technology issues to other school staff. Others crossed out the word **delegate** and wrote in **share, collaborate on, involve, seek input.**

Two other statements showed agreement by over 90% of the principals. Ninety-five percent of the principals felt that it was their

responsibility to make recommendations to staff on professional development training related to acquisition of computer skills. Another 92% of the principals felt that they should be able to discuss technology issues independent of other school personnel.

Data on Research Question 2 showed there is some disagreement among elementary principals regarding their role as leaders in computer technology implementation. There is also disagreement related to delegating decisions and what the principal needs to know in order to make decisions about computer technology purchases. Finally, however, there is overwhelming agreement that a designated technology person should be assigned at the building level.

What do elementary principals perceive as important for them to be able to accomplish regarding computer applications and their own productivity?

Responses to the survey questions designed to gather information regarding computer applications and the productivity of the principal can be found in Table 3 and Appendices G-J. All of the principals (100%) agreed or strongly agreed that they should participate in computer

Table 3

Distribution of Respondents' Opinions on Computer Applications and
Their Own Productivity

What do elementary principals perceive as important for them to be able to accomplish regarding computer applications and their own productivity?	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
(19) The principal should participate in computer technology training that is specific to their administrative role.	65	35		
(27) Principals who have access to computer technology at home are better able to remain current in changing applications of this technology.	53	36	10	2
(16) The principal should be proficient in sending and receiving E-mail.	41	54	3	2
(22) The principal should participate in training related to the Internet.	43	50	7	1
(18) The principal should access local bulletin boards for information related to school issues.	32	61	6	1
(17) The principal should use the Internet as a resource for professional research.	37	55	7	1
(24) The principal should be able to retrieve student data for the purpose of developing school plans.	33	51	16	1
(21) The principal should participate in training in various software applications related to word processing.	29	57	15	1
(20) The principal should participate in training related to network administration.	28	53	18	1
(25) The principal should be required to meet computer technology competencies developed at the division level.	27	57	13	3
(15) The principal should be able to create presentations using computer technology (example: overheads or slide show).	23	53	20	4
(23) The principal should be able to retrieve student data from LSIS terminal.	25	49	24	2
(26) The principal should be required to meet computer technology competencies developed at the state level.	21	55	19	5

(continued)

42

Table 3 (continued)

What do elementary principals perceive as important for them to be able to accomplish regarding computer applications and their own productivity?	% Strongly Agree	% Agree	% Disagree	% Strongly Disagree
(14) The principal should have the necessary skills to prepare all documents that come out of his/her office for distribution (note: this may not be the practice but could be done in the absence of staff who might normally perform this duty).	18	47	29	6
(29) The principal's primary role in the area of computer technology is that of facilitator and their own knowledge and skill of computer technology can be minimal.	10	16	50	24

Note. The numbers in parenthesis correspond to the questions on the survey.

technology training that is specific to their administrative role. However, there was not clear agreement on what that training should involve. Nineteen percent did not think they should participate in training related to network administration while another 16% did not think they should engage in training opportunities that focused on software applications related to word processing.

Statements that considered computer applications in the area of communication such as sending and receiving E-mail, accessing local bulletin boards, and using the Internet, received responses that indicated over 90% of the principals agreed on the importance of these activities.

Responses to the other questions that addressed Research Question 3, however, yielded mixed opinions. There was less agreement on the issue of retrieving student data. Twenty-six percent of the principals did not think that they should be able to retrieve student information from Local Student Information System (LSIS). Another 17% did not think they needed to be able to retrieve student data to develop school plans.

Two questions that examined the principal's own productivity and skill received mixed opinions. Over half (65%) of the principals did think that they should have the necessary skills to prepare documents that came

out of their office while 35% of the principals disagreed or strongly disagreed with that statement. Over three-fourths (76%) of the respondents thought that they should be able to create presentations using computer technology yet 24% disagreed that they needed to have that expertise.

There were two questions designed to elicit responses related to computer technology competencies for administrators. There was agreement among 84% of the principals that division level competencies should be required. However, there was less agreement regarding state level competencies. Seventy-six percent of the principals agreed that there should be competency requirements developed at the state level.

Finally, survey question 29, showed that 26% of the principals felt that their own knowledge and skills in computer technology can be minimal because they perceive their role to be that of facilitator. Those, however, who disagreed with that statement represented 74% of the respondents thereby stating that their own knowledge and skills must be more than minimal.

Summary

This chapter presented the findings of the study for each of the three research questions. Response rates for the questionnaire were also reported.

Data analysis revealed that principals agree most on areas related to student learning and computer applications, those items addressed in Research Question 1. However, Research Question 2 produced results indicating less agreement among elementary principals regarding their leadership role and on whom to rely when making decisions related to computer technology implementation. The widest range of responses was found to be in the area of computer applications and the principal's own productivity as evidenced in the responses to statements attributed to Research Question 3.

CHAPTER 5

CONCLUSIONS

The results of this survey indicate that the role of the elementary principal as it relates to computer technology is not clear. While the data did show that there was high agreement among participants in most areas, the fact that disagreement exists implies that discrepancies exist. The data clearly show that elementary school principals who responded to the survey perceived computer applications important particularly as it relates to student learning. Four of the six questions that focused on student learning received responses of agree or strongly agree from at least 94% of the respondents. One statement that suggested that principals should be able to identify appropriate grade level software yielded 82% agreement. One respondent, who disagreed, wrote on the survey that knowing grade level software was a teacher's responsibility.

There was high agreement (95%) by principals on the statement that the principal should be able to articulate division policy as it relates to computer usage in such areas as site licensing, Internet usage, and social and ethical issues. However, when asked if principals should be able to

identify specific security systems and their functions, 18% of the principals did not agree. Internet usage and social and ethical issues related to student usage often involve security systems. The researcher concluded that some respondents did not understand a connection between security systems and Internet usage. Another conclusion might be that while a large majority of the principals acknowledge the overall importance of being able to articulate division policy, they may not comprehend every aspect of the policy.

There was more disagreement among principals on statements that addressed Research Question 2. Principals did not agree on who should be making decisions related to computer technology. Just over half of the respondents (55%) agreed with delegating decisions to other school staff, most of the other respondents (40%) strongly disagreed with that statement. A number of respondents either crossed out the word **delegate** on the survey, substituted another word or words, or added a statement indicating that shared decision making or collaboration was practiced. Responses might be interpreted as a reaction to the word **delegate** and not provide a true understanding of who is making decisions related to computer technology.

48

Except for one respondent, all other principals agreed that the principal must know key personnel to contact to make decisions related to the purchase of computer software and hardware. There was not total agreement, however, on the role of the principal when making purchasing decisions. While 83% of the principals did think that they should have the knowledge base to make purchasing decisions, 16% strongly disagreed. The researcher concluded that those who disagree with the statement must feel confident that they are receiving good advise from other school staff or key personnel since ultimately it is the principal who approves all school purchases.

There was not complete agreement in terms of the role of the principal as a leader. Most of the respondents (84%) did think that the principal is the most important person in facilitating an environment that supports technology. However, 16% did not see the principal as the most important person. Another leadership practice that resulted in disagreement among the participants was the importance of modeling. Most (81%) agreed that the principal should model computer technology applications but 19% did not perceive modeling as needed. Sergiovanni (1996) maintains that it is important for principals to perform tasks that

included motivating, explaining, enabling and modeling. While 19% of the principals did not think that it was important for them to model computer technology applications, it would be interesting to follow-up with those particular respondents to see if they value modeling as a task in other areas or if they would simply disagree with Sergiovanni's assumption.

The importance of having a designated person in each building to deal with the day to day maintenance of hardware and management of the local network, received overwhelming support from the principals. A total of 89% of the respondents strongly agreed with the statement addressing this issue. In addition, many principals indicated the significance of having this position by adding comments directly to the survey. It can be concluded that the principals surveyed place a high priority on having a technology resource person in their building.

The final focus of the study was concerned with personal productivity. There is disagreement among principals as to what they need to be able to do in the area of computer applications and their own productivity. There was notable disagreement to the statement that principals should have the necessary skills to prepare all documents that

come out of his/her office for distribution. Even with the added statement that while this may not be the practice, over one third of the principals disagreed that they should be able to prepare documents for distribution. Documents that come from the principal's office are typically generated through word processing so it might be concluded that 35% of the principals who responded do not think they need to have word processing skills. A possible relationship might be noted when looking at the results of the statement that asked if principals should participate in training related to word processing and 16% of those responding said no. It could be concluded based on the responses to those two statements that there are some principals with minimal word processing skills and some who have little desire to acquire additional skills in that area.

Two questions suggested that principals be required to meet computer technology competencies at either the division or state level. Sixteen percent of the respondents did not feel that there should be a requirement to meet division level competencies. After the surveys were returned, the school division released a draft of their Technology Training Plan (1997) that includes a recommendation for all employee performance evaluations to include a job related technology competency. Twenty-four

percent of the respondents did not feel there should be a requirement to meet state level technology competencies. The General Assembly of Virginia (1997) passed HB 1848 that requires local school boards to add an educational technology component to the program of professional development as part of the license renewal process. It appears as if decisions have been made regarding technology competencies and that elementary principals will be held to standards just as students and teachers are being required to face.

There was mixed reaction from principals regarding the need to access student data. Over one fourth of the principals did not agree that they should be able to retrieve data from the Local Student Information System (LSIS). However, most principals (83%) thought that they should be able to access student data for the purpose of developing school plans. Results do indicate that not everyone sees this responsibility as one of the principal's duties. Given the increased focus on accountability, however, every school leader must be able to access, interpret and strategically plan using school data.

There was strong agreement among the respondents on those statements that centered around communication. Almost all (92%) of the

52

principals agreed that they should be able to use E-mail, use the Internet as a resource and access local bulletin boards. It could be concluded from this finding that between and among principals and others that the computer has become a necessary tool for communication purposes.

Statements about training opportunities for administrators elicited a variety of responses. There were mixed opinions on the value of network administration training. Eighteen percent of the principals disagreed with the need to participate in network training. One possible conclusion that could be drawn is those principals who disagreed do not have networks in their building and therefore are unaware of the complexities and issues relevant to having a LAN (local area network). Less than ten percent of the principals disagreed with the suggestion that principals participate in training on the Internet.

All of the respondents felt that the principal should participate in computer technology training that is specific to their administrative roles. This clearly indicates a willingness to learn those skills necessary to improve the productivity of elementary principals.

The results of this study indicate that elementary principals fall along a continuum in terms of what they perceive as important in the area

of computer technology. There is high agreement among principals regarding student learning and computer applications. There is some disagreement among principals about their role in making decisions related to computer technology implementation. The area that yielded the greatest differences focused on what principals perceived as important to improving their own productivity.

Recommendations

Based on the results of the data, a number of recommendations can be made. The data did support that principals perceive there is a critical need for a designated technology person in every building. While the roles of the principal and other staff are not as clearly defined in terms of facilitating and implementing technology initiatives, the need for someone with expertise in managing hardware and the local network was overwhelmingly expressed. The school division should consider placing a technology specialist in every building.

There is evidence that a high number of elementary principals use and support computer technology. There was agreement among all respondents that training needed to be specific to the needs of the school

administrator. A needs assessment should be conducted to determine exactly what training opportunities elementary principals seek.

Where competency standards are being developed, it would be helpful to elementary principals if training opportunities would focus on those required competencies. Sufficient time to learn and time to practice must be integrated into the training plan.

Another recommendation would be that every principal have desktop access to a computer in their office. There was strong support for using the computer for communication purposes and ready access would enhance those opportunities.

School division expectations must be clear regarding the role of the principal in the area of computer technology. Emphasis must be placed on both the technical skills expected and the knowledge base needed by the principal to utilize and interpret data.

The role of the elementary school principal in the area of computer technology continues to evolve. Principal preparation programs and staff development opportunities will need to focus on the specific needs of this group of educators. Training specifically tailored to the needs of the

elementary principal will facilitate greater consistency in learning and using technology.

Recommendations for Further Study

In future studies it would be meaningful to determine if there is a relationship between the resources available in a school in terms of hardware, software, and human resources and the use of technology. The perceptions of the principal with regard to computer technology implementation and usage may depend on whether the school has state of the art equipment or limited resources.

This study might be replicated with a focus on assistant principals. It would be important to determine what perceptions exist for those who will be moving into the principalship. A study specific to assistant principals might also include questions related to the principal's role as a technology leader. Perhaps some assistant principals have assumed that leadership role in technology because the principal does not have the expertise in that area.

Future research might also include a qualitative study focusing on those administrators who are high end users. Their experiences that led

them to be comfortable with using computer technology might assist trainers in designing future educational opportunities. Also included might be questions related to their leadership role both as a facilitator and innovator of technology applications.

Finally, it is critical to know what principal preparation programs are including in their training of future administrators specifically in the area of technology. As teacher training programs continue to expand their emphasis on computer applications, teachers entering the profession arrive with skills in the area of computer technology. For those individuals who have not participated in teacher level computer training but are aspiring administrators, it is important to know that they will have opportunities to acquire the necessary skills and knowledge in computer technology.

Personal Commentary

The journey into the world of computer technology is different for everyone. Some of those who move quickly are called "techies". Those are the individuals who love computers, use them often, for a variety of purposes, and are first in line for the newest software or hardware purchase. However, there are those of us who use the computer because

it has expanded our ability to produce materials and access information. While in many ways it has increased our efficiency and productivity it has also been the most time consuming, frustrating tool of our existence. As an elementary principal, this researcher can not function without a computer. However, as an untrained operator of technology, often endless hours are spent "stuck" in some program that is intended to make my job easier. With less than ten hours of formal training in computer technology, this principal is fairly proficient at word processing, uses E-mail regularly, surfs the Internet occasionally and can create presentations using computer software. Yet there is a need to learn a great deal more in order to improve my own productiveness. We all should aim to embark upon this journey, knowing from the beginning that there will be no final destination.

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APPENDICES

APPENDIX A

Jean F. Nikovits
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February 1, 1997

Educators of the 21st Century must be aware of and able to utilize a variety of emerging computer-based applications. The challenge for elementary school principals is to ascertain their role in this technological environment and determine what knowledge and skills they must possess to maintain forward movement in the information age. As part of my doctoral studies I have designed a survey that addresses computer technology and the elementary school principal. The technology committee of the local Association of Elementary School Principals has expressed an interest in this area. Survey results will be shared with the school division.

As an elementary school principal your input is critical. The information you provide will be useful to those who design staff development and to those who plan principal preparation programs at the university level. Understanding what principals perceive as important for them in the area of computer technology hopefully will lead to meaningful training opportunities.

Individual responses to the survey will be treated confidentially. The presence of an identifying number on the questionnaire is to facilitate the sending of follow-ups, a practice that is essential for producing a high response rate. Research findings will be published in an article in the elementary principal's newsletter.

The data you provide will directly represent the voice of the elementary school principal. Your participation is highly valued and will yield pertinent information. Please return your survey by Friday, February 14, 1997. Thank you for your contribution to this research.

Sincerely,

Jean F. Nikovits
Doctoral Candidate, Virginia Polytechnic Institute and State University
Principal, Columbia Elementary School

APPENDIX B

Administrator's Survey on Computer Technology

Directions: Write the number of your response on the line next to the statement.
Choices: #1 Strongly Agree   #2 Agree   #3 Disagree   #4 Strongly Disagree

____ 1. The principal should be able to identify what principles of instruction are employed through the use of various software applications used by students (Ex. practice, drill, individualized instruction, simulation).

____ 2. The principal should be able to identify appropriate software at different grade levels.

____ 3. The principal should be able to identify specific security systems and their functions as it relates to computer usage and students (Ex. Fire walls, At Ease, Fool Proof).

____ 4. The principal should be able to discuss the advantages/ disadvantages to having a local network (LAN) within a building.

____ 5. The principal should be able to discuss the advantages/ disadvantages to having a computer lab versus computers in every classroom.

____ 6. The principal should be able to articulate division policy as it relates to computer usage, in such areas as: site licensing, Internet usage, and social and ethical issues.

____ 7. The principal should delegate the decisions related to computer technology to other school staff.

____ 8. The principal should know and understand computer technology issues well enough to discuss these independent of other school personnel.

____ 9. The principal is the most important person to facilitate an environment that supports technology.

_____ 10. The principal must model computer technology applications in order to move the staff forward in this area.

_____ 11. The principal should make recommendations to staff for professional development training as it relates to acquisition of computer skills.

_____ 12. The principal should have the knowledge base to make purchasing decisions regarding computer technology.

_____ 13. The principal should be assigned a designated technology position at the building level who would be responsible for the day to day maintenance of hardware and/or the management of the local network.

_____ 14. The principal should have the necessary skills to prepare all documents that come out of his/her office for distribution (note: this may not be the practice but could be done in the absence of staff who might normally perform this duty).

_____ 15. The principal should be able to create presentations using computer technology. (example: overheads or slide show).

_____ 16. The principal should be proficient in sending and receiving E-mail.

_____ 17. The principal should use the Internet as a resource for professional research.

_____ 18. The principal should assess local bulletin boards for information related to school issues.

_____ 19. The principal should participate in computer technology training that is specific to their administrative role.

_____ 20. The principal should participate in training related to network administration.

_____ 21. The principal should participate in training in various software applications related to word processing.

_____ 22. The principal should participate in training related to use of the Internet.

_____ 23. The principal should be able to retrieve student data from the LSIS terminal.

_____ 24. The principal should be able to retrieve student data for the purpose of developing school plans.

_____ 25. The principal should be required to meet computer technology competencies developed at the division level.

_____ 26. The principal should be required to meet computer technology competencies developed at the state level.

_____ 27. Principals who have access to computer technology at home are better able to remain current in changing applications of this technology.

_____ 28. The principal must know which key personnel to contact to make decisions related to purchasing of computer hardware and software.

_____ 29. The principal's primary role in the area of computer technology is that of facilitator and their own knowledge and skill of computer technology can be minimal.

Thank you for participating in this survey.

APPENDIX C

ON FEBRUARY 1, 1997 YOU WERE MAILED AN ADMINISTRATOR'S SURVEY ON COMPUTER TECHNOLOGY. IF YOU HAVE ALREADY COMPLETED AND RETURNED IT TO ME PLEASE ACCEPT MY SINCERE THANKS. IF NOT, PLEASE DO SO TODAY. IT IS IMPORTANT THAT YOURS BE INCLUDED IN THE STUDY OF ELEMENTARY PRINCIPALS IN YOUR SCHOOL DIVISION.

IF BY SOME CHANCE YOU DID NOT RECEIVE THE SURVEY OR HAVE MISPLACED IT, PLEASE CALL ME RIGHT AWAY AT COLUMBIA ELEMENTARY SCHOOL AT 916-2500 AND I WILL GET ANOTHER ONE IN THE MAIL TO YOU TODAY.

SINCERELY,

JEAN F NIKOVITS
DOCTORAL CANDIDATE, VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY
PRINCIPAL, COLUMBIA ELEMENTARY SCHOOL

APPENDIX D

Jean F. Nikovits
8536 Chase Glen Circle
Fairfax Station, Virginia 22039

February 22, 1997

Dear   ,

On February 1, 1997 you were sent an administrator's computer survey. The large number of questionnaires returned is very encouraging. In this ever-changing world of technology we, as school based administrators, need to determine our role in facilitating and implementing computer technology initiatives. It is critical that the voice of each elementary principal in school division be included.

Results of this survey will be shared in a future newsletter of the local Association of Elementary Principals. The technology committee of local association is especially interested in the data that are collected and look forward to a presentation on the results of this research.
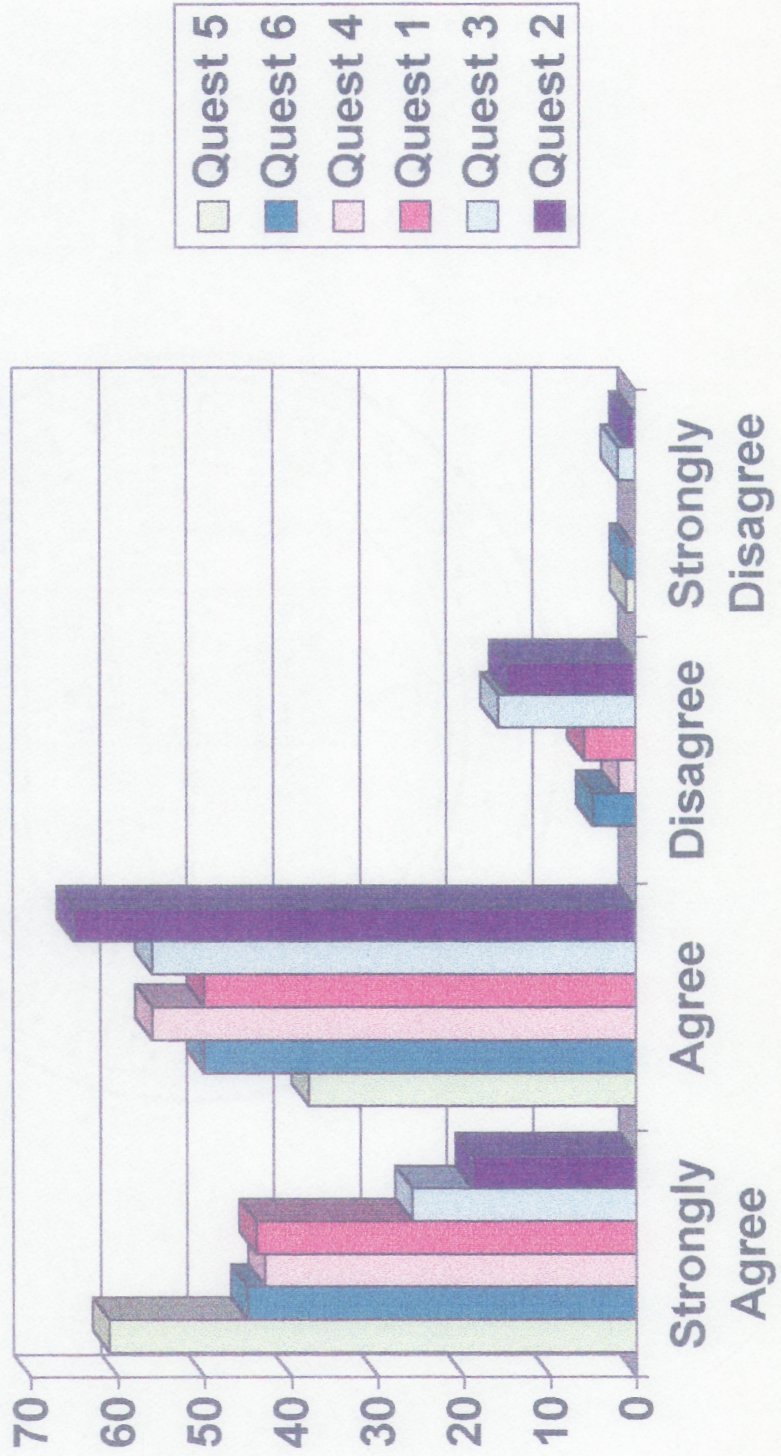
A replacement questionnaire has been included with this letter in the event that the original one has been misplaced. May I urge you to complete and return it by February 28, 1997.

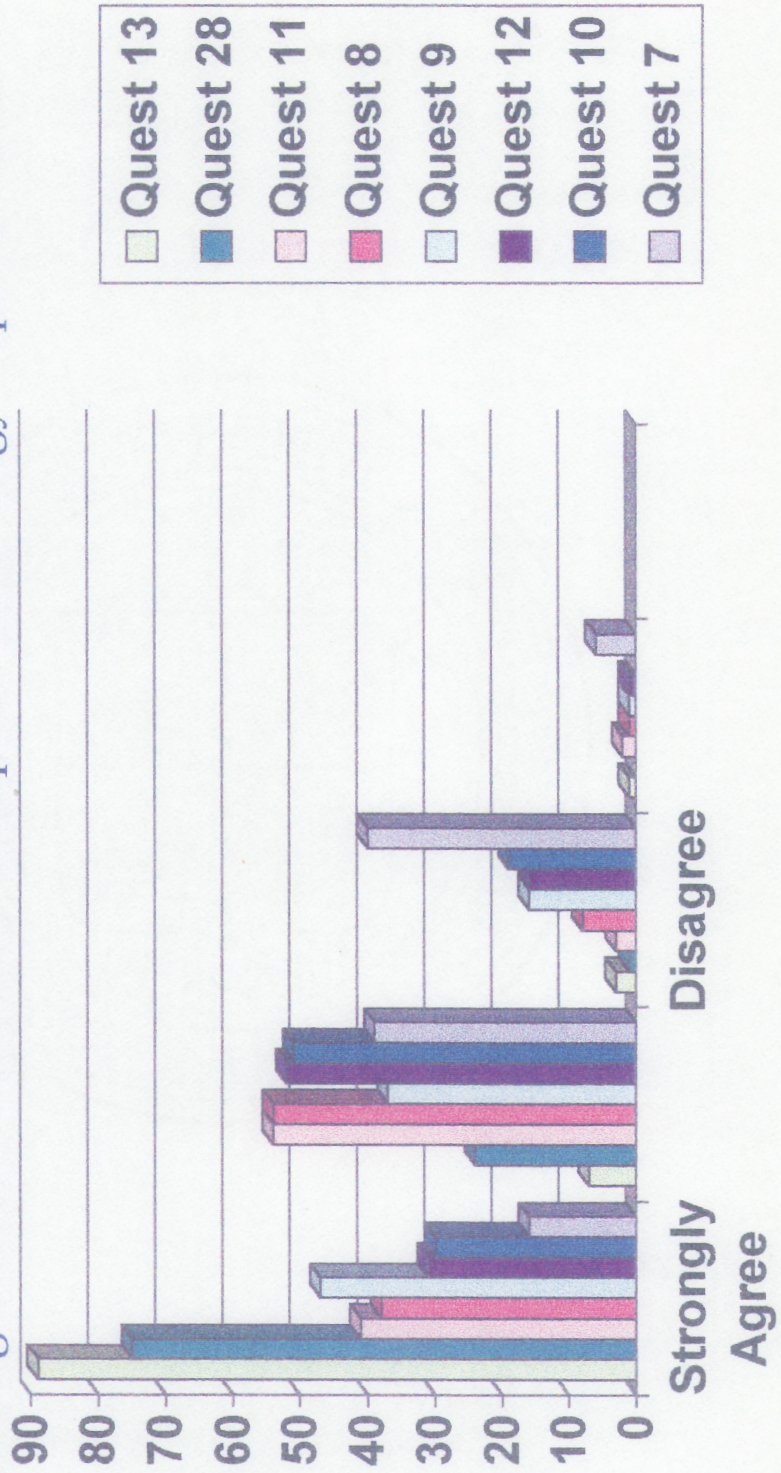Your contribution to the success of this study will be appreciated greatly.

Sincerely,

Jean F. Nikovits
Doctoral student at Virginia Polytechnic Institute and State University
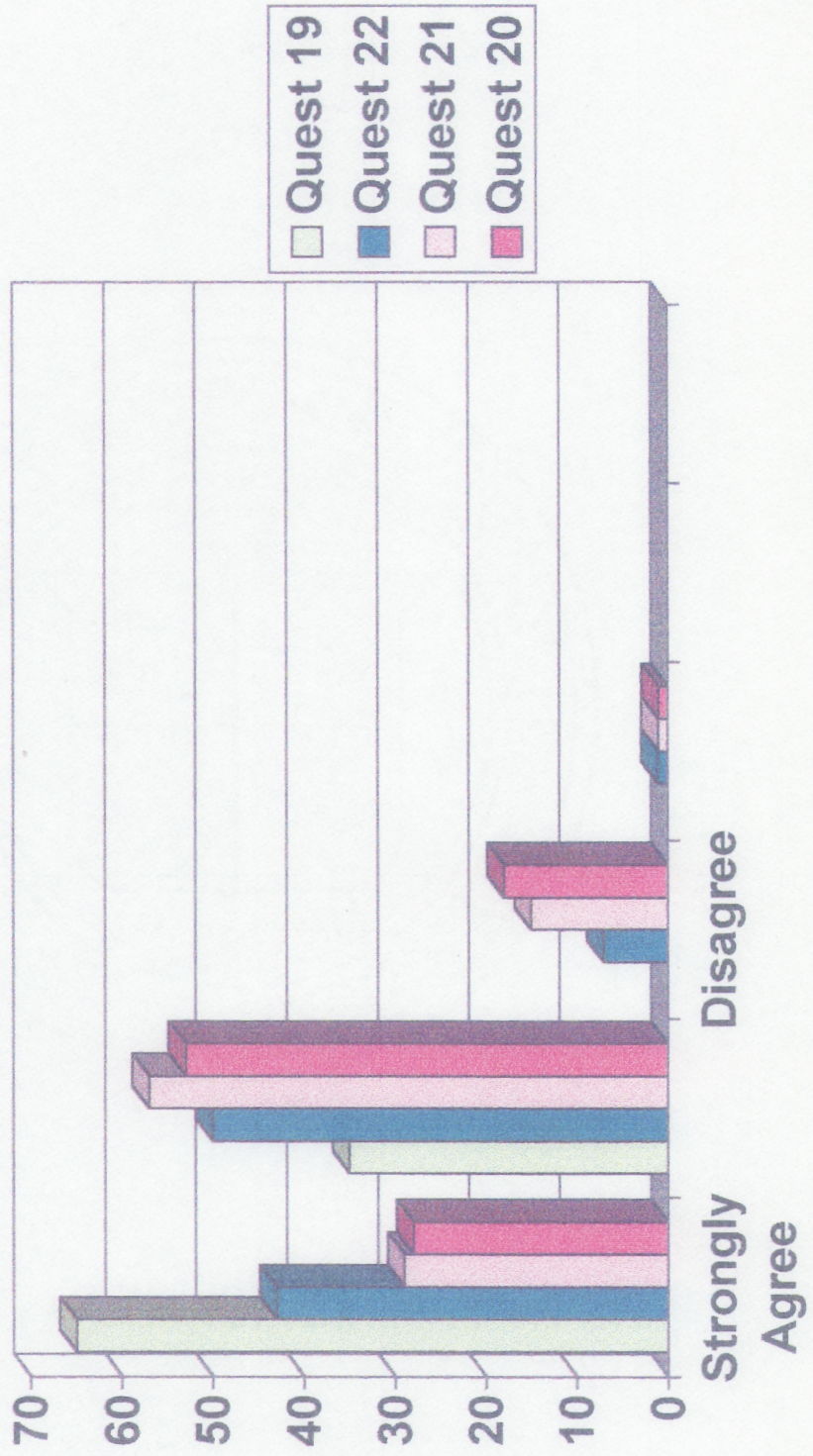Principal, Columbia Elementary School

Appendix E

Distribution of Respondents' Opinions Regarding Computer
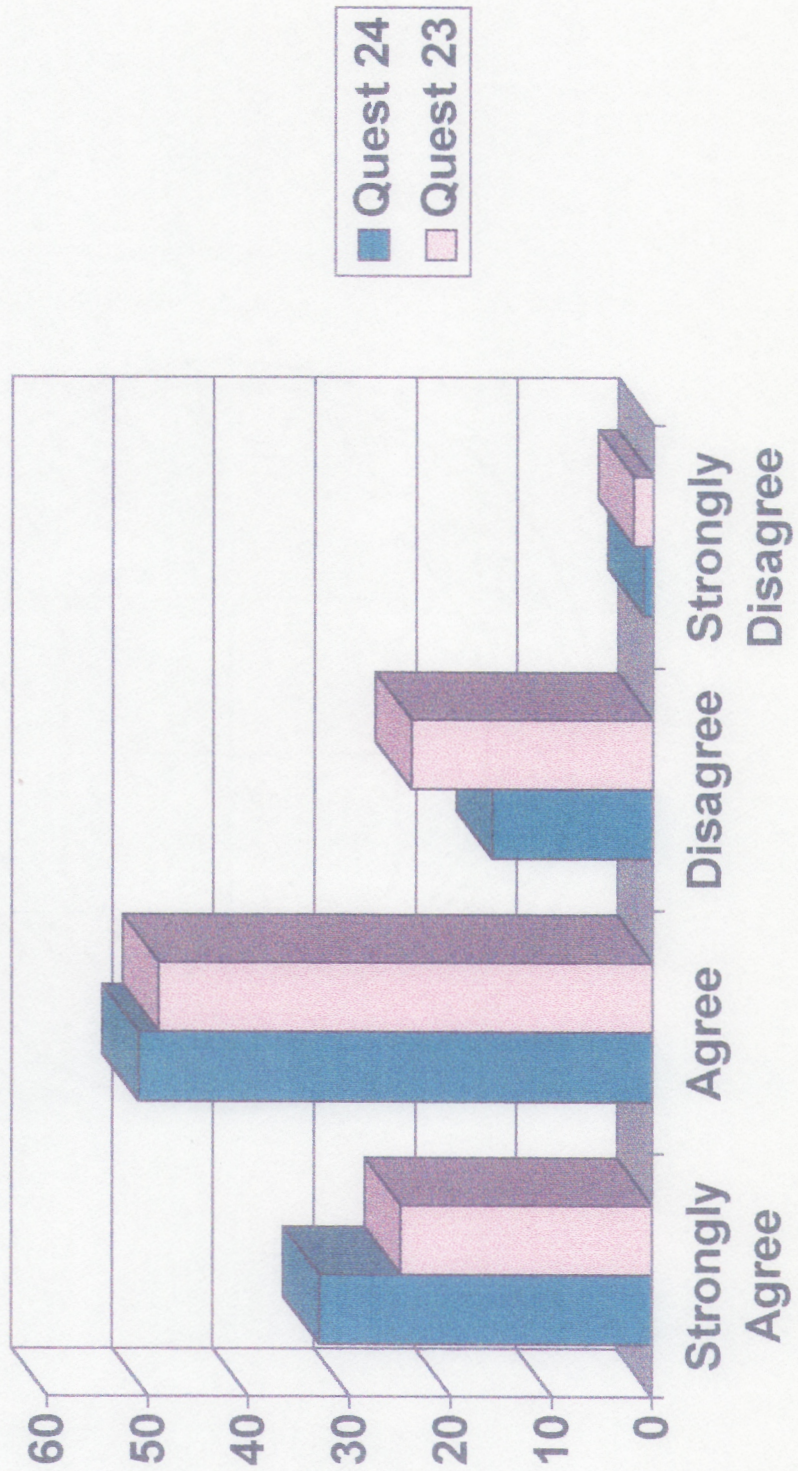Applications and Student Learning

Legend:
- Quest 5
- Quest 6
- Quest 4
- Quest 1
- Quest 3
- Quest 2

Categories: Strongly Agree, Agree, Disagree, Strongly Disagree

Appendix F

Distribution of Respondents' Opinions on Who Principals Rely on When Making Decisions Related to Computer Technology Implementation
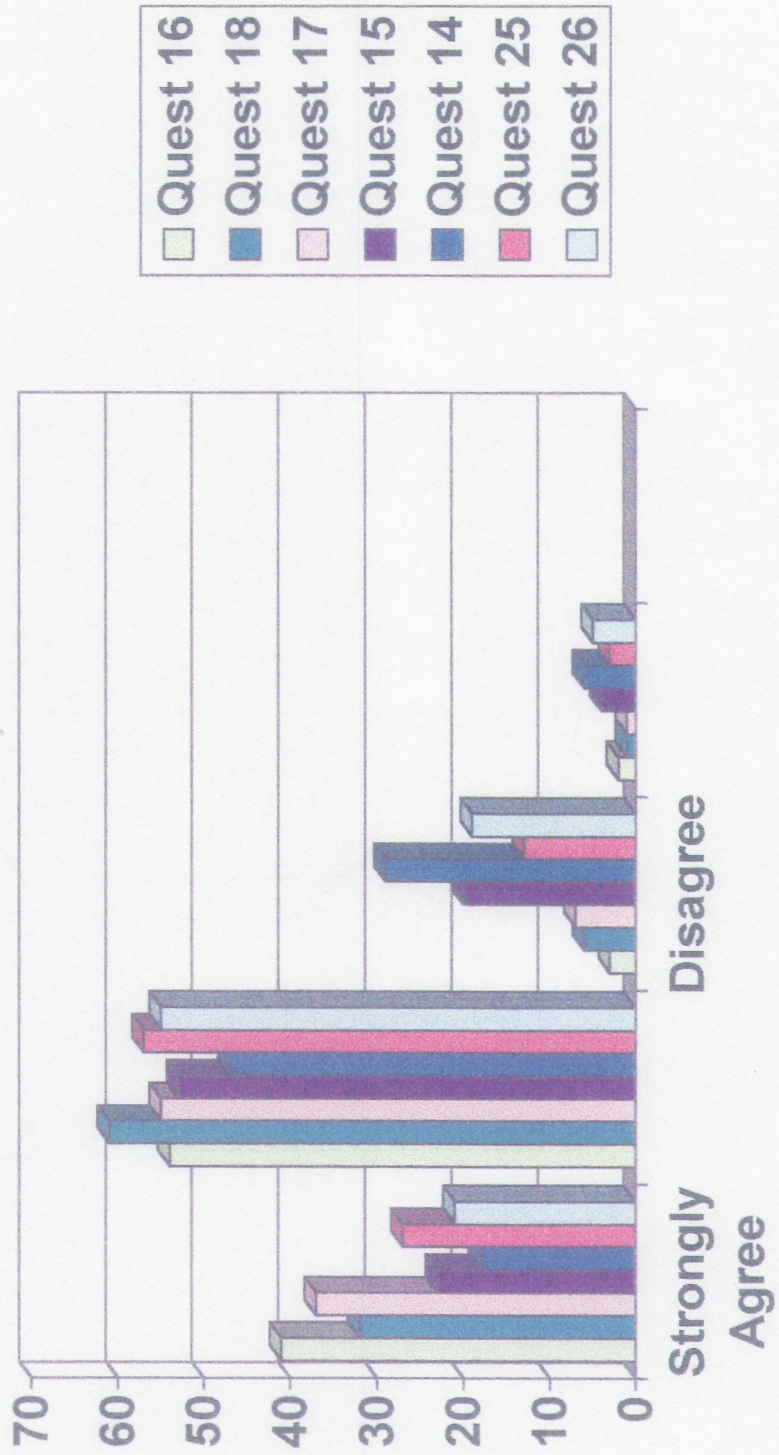

Legend:
- Quest 13
- Quest 28
- Quest 11
- Quest 8
- Quest 9
- Quest 12
- Quest 10
- Quest 7

Appendux G
Training for Administrators

Student Information Systems

Appendix I

Skills and Competency Requirements

Legend: Quest 16, Quest 18, Quest 17, Quest 15, Quest 14, Quest 25, Quest 26

X-axis: Strongly Agree — Disagree

Y-axis: 0, 10, 20, 30, 40, 50, 60, 70

Appendix J

The principal's primary role in the area of computer technology is that of facilitator and their own knowledge and skill of computer technology can be minimal.
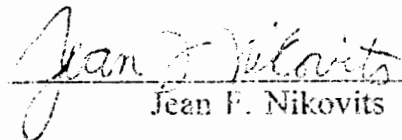
VITA

Jean F. Nikovits is currently the principal of Columbia Elementary School in Fairfax County Public Schools. Prior to her assignment at Columbia Elementary, she was an assistant principal at Westlawn Elementary School in Fairfax County. For four years, Mrs. Nikovits was the principal of Mantua Center, a special education center, serving profoundly deaf and hard of hearing students in Fairfax County Public Schools.

Prior to her administrative experience, Mrs. Nikovits was a classroom teacher of the deaf and hard of hearing at the middle and high school levels. She also has classroom experience as an elementary special education teacher, having taught learning disabled and hearing impaired children.

Mrs. Nikovits was a participant in the National Leadership Training Program at California State University, Northridge. While attending CSUN, she earned a Masters degree in Educational Administration. Her undergraduate degree is in elementary and special education from Glassboro State College, Glassboro, New Jersey.

Jean F. Nikovits
Jean F. Nikovits