

AN ANALYSIS OF BARRIERS AND POSSIBLE SOLUTIONS IN INTEGRATING
COMPUTER TECHNOLOGY INTO MIDDLE SCHOOL CURRICULUM: FINDINGS
FROM A MIXED-METHOD APPROACH

By

Lois J. Cavucci

Submitted in Partial Fulfillment of the Requirements

for the Degree of

Doctor of Education

in the

Educational Leadership Program

SCHOOL OF GRADUATE STUDIES AND RESEARCH
YOUNGSTOWN STATE UNIVERSITY

May, 2009

AN ANALYSIS OF BARRIERS AND POSSIBLE SOLUTIONS IN
INTEGRATING COMPUTER TECHNOLOGY INTO MIDDLE SCHOOL
CURRICULUM: FINDINGS FROM A MIXED METHODS APPROACH

Lois J. Cavucci

I hereby release this dissertation to the public. I understand that this dissertation will be made available from the OhioLink ETD Center and the Maag Library Circulation Desk for public access. I also authorize the University or other individuals to make copies of this dissertation as needed for scholarly research.

Signature:

Lois J. Cavucci, Student

Date

Approvals:

Dr. Gunapala Edirisooriya, Dissertation Advisor

Date

Dr. Richard C. Baringer, Committee Member

Date

Dr. Jeffrey Buchanan, Committee Member

Date

Dr. Lauren Cummins, Committee Member

Date

Peter J. Kasvinsky, Dean of School of Graduate Studies & Research

Date

ABSTRACT

This study examined the barriers to integrating computer technology in middle school curriculum and formulated possible strategies to help educators overcome identified barriers for the benefit of students and the educational program. Three hundred and ninety-seven survey instruments were personally delivered to middle schools in the state of Ohio. The respondents were representative of teachers in Mahoning and Trumbull Counties. The data from this survey was sufficient to identify barriers and offer possible strategies.

The survey data identified five factors as possible barriers to the utilization of computer technology in the classroom. These barriers are (a) technology equipment that did not function properly or did not function at all, (b) the lack of training, (c) the lack of time to successfully integrate computer technology into the classroom, (d) the students' familiarity with computer technology and/or lack of computer technology in students' homes, and (e) the cost associated with computer technology classes at a university or college.

This study also identified possible strategies for future use that would encourage teachers to utilize computer technology in the classroom. These strategies are (a) provide in-services at the end of a workday, (b) have a technology support staff person available to middle school teachers on a daily basis, (c) staff meetings with computer technology experts to present new and innovative ideas to the middle school teachers, and (d) technology equipment in properly working order that would allow middle school teachers to utilize computer technology when they desired to do so.

DEDICATION

The greatest possession we have costs nothing, it's known as love. -Brian Jett

This dissertation is dedicated to my loving family who patiently and quietly waited for its completion. To my husband David, my best friend and confidant, who without, I could have never attained this goal. I thank the Good Lord each and every day for his love, support, and the many sacrifices that he made for three years as I sat in front of the computer day in and day out to complete this project, I am eternally thankful. David, I love you.

To my two beautiful daughters, Lena and Rachel whom I am so very proud, thank you for always understanding my need and desire to complete this project. I hope my accomplishments inspire both of you to reach the goals you set for yourselves and to realize that anything is attainable if you are willing to work for it. Set those goals high my daughters and go for it.

To my mother, Mary Lou Cahill, my sisters Suzie and Sharon, and my sister-in-law Diane, who always took the time to inquire into the progress of my dissertation. Your thoughtful and encouraging questions and comments were very dear and motivational to me. Suzie, your wise words have never left me and when I was feeling overwhelmed, I would often think of them. Your words, "Always remember the three "P's," patience, persistence, and perseverance, and you will get through this." Through the years I added one more "P" word, "prayer."

And last, but never least, to the Father, Son, Holy Spirit, and Mary who are always at my side and who guided and blessed my family and myself throughout the dissertation process.

ACKNOWLEDGMENTS

Alone we can do so little;
Together we can do so much.
-Helen Keller

Many people have contributed to the success of this research project. My deep appreciation and heartfelt thanks go to my dissertation chair, Dr. Gunapala Edirisooriya. Dr. Edirisooriya enthusiastically gave me an unlimited amount of his time, guidance, patience, and wisdom. Without him this study would not have come to fruition. A special thanks to committee member Dr. Richard Baringer. He always took the time to listen to my concerns whenever I was feeling overwhelmed and he helped guide me through this project. I wish to acknowledge my gratitude to Dr. Lauren Cummins and Dr. Jeffrey Buchanan, two professors at Youngstown State University who served on the dissertation committee and offered their expertise and encouragement.

A deep appreciation goes to my editor, who patiently gave her time and energy to editing this dissertation to the best of her abilities. A very *special* thank-you goes to Ryan Livingston who assisted me with the statistics.

Finally, I would like to acknowledge my friend, Dr. Charles Jeffords. His unwavering support and wise words was a motivator that guided me throughout this project. Thank you.

TABLE OF CONTENTS

SIGNATURE PAGE		ii
ABSTRACT		iii
DEDICATION		iv
ACKNOWLEDGEMENTS		v
LIST OF TABLES		
Table 1	Three Technology Perspectives	14
Table 2	Participants' Responses/Percentages to Survey Questions 18–26	36
Table 3	Number of Participants Responding to Survey Questions 27–29	42
Table 4	Participants' Responses to Question 30	48
Table 5	Participants' Responses to Question 31	51
Table 6	Type of Support Provided to Participants	53
Table 7	Networking with Regard to Integrating Computer Technology	55
LIST OF FIGURES		
Figure 1	Participants' Range of Age	25
Figure 2	Participants' Total Years Teaching Experience	26
Figure 3	Number of Years Participants Taught at Current School	27
Figure 4	Grades Currently Teaching	29
Figure 5	Number of Years Participants Used Computers in Their Classrooms	30
Figure 6	Subjects Taught by Participants	31

Figure 7	Number of Computers in Participants' Classrooms	32
Figure 8	Number of Hours Each Week Participants Used Computers in their Classroom	33
Figure 9	Number of Hours Each Participant Used Computers in the Computer Lab	35
CHAPTER 1	INTRODUCTION	
	Statement of the Problem	1
	Purpose of the Study	2
	Significance of the Study	4
	Research Questions	5
	Limitations	5
	Delimitations	6
	Definition of Terms	6
CHAPTER 2	LITERATURE REVIEW	
	Introduction	8
	Teacher Concerns	9
	Professional Development	10
	Technology Perspectives	13
	Integration of Technology	15
CHAPTER 3	RESEARCH METHODS	
	Population and Sample	19
	Instrumentation	20
	Design of the Study	21
	Data Analysis	21

CHAPTER 4	DATA ANALYSIS	
	Data Analysis	23
CHAPTER 5	CONCLUSIONS AND RECOMMENDATIONS	
	Overview of the Study	58
	Recent Literature	59
	Barriers to Integrating Computer Technology	60
	Technology Equipment	61
	Training	62
	Time	62
	Students	63
	Cost	64
	Possible Solutions and Strategies	65
	In-Services	65
	Technology Support Staff	66
	Computer Technology Equipment	66
	Staff Meetings	67
	Common Planning Times	67
	Conclusions and Recommendations	68
	Conclusions	69
	Recommendations	69
	Future Research	80
REFERENCES		
	References	82

APPENDIX

Appendix A	Survey Instrument	91
Appendix B	Letter of Introduction	96
Appendix C	Informed Consent	97
Appendix D	Human Subjects Research Committee Permission	98
Appendix E	Participants' Replies to Question 27	99
Appendix F	Participants' Replies to Question 28	110
Appendix G	Participants' Replies to Question 29	119
Appendix H	Participants' Replies to Question 30	130
Appendix I	Participants' Replies to Question 31	141
Appendix J	Participants' Replies to Question 32	148
Appendix K	Participants' Replies to Question 33	157

CHAPTER 1

INTRODUCTION

Statement of the Problem

It is generally accepted that the teachers who learn how to integrate technology into their classrooms teach differently than teachers who received no such training. According to Christensen (2002), teachers with training have a positive effect on their students' attitude toward technology.

Computers have played a critical role in educational settings for several decades. An early study reported that only 20% of the 2.5 million public school teachers feel comfortable using computers in the classroom (U.S. Department of Education, 1999). More recently, a middle-school context study found that even with extensive professional development and student access to technology, teachers struggle to use computers in promoting student-centered learning (Orrill, 2001).

In today's society, schools need to expose students to computer technology and use it as a classroom resource. This technological investment may improve the effectiveness of the instructional practices of teachers and, in turn, improve student performance (Moran, 2006). However, studies show that today's teachers are not prepared to effectively use existing technology in the classroom (Collier, Rivera, & Weinburgh, 2004). As the number of computers accessible to students and teachers has

increased, there has been a growing emphasis on integrating technology across the curriculum (O'Bannon & Judge, 2004). Administrators have recognized the demand for teachers who are capable of integrating technology into instruction, yet some researchers emphasize that many teachers feel unprepared to meet the challenge (Schrum, 1999). This study examined the barriers in integrating computer technology into the middle school curriculum and its findings will enable us to formulate some possible strategies.

Purpose of the Study

As a former computer technology instructor, it was my responsibility to supervise the computer laboratory and to work with the teachers in the building. By inviting the teachers and their students into the computer lab, the teachers had the opportunity to work with both the computers and the computer teacher. This school building housed approximately 525 students and 31 teachers along with staff support. It was a grade 5–8 building with five classrooms at each grade level.

While working in this building, it became clear that teachers lacked the knowledge to integrate computer technology with the major subject areas of math, science, language arts, reading, and social studies/geography. It was during this time that my interest in the teachers' educational background regarding computer technology first started.

Three periods were set aside each day for classroom teachers to bring their students into the computer lab and integrate computer technology into their everyday lessons. A calendar placed outside of the computer lab invited teachers to sign up for the periods they wanted to bring their students in to the lab. While there was not enough time

for each teacher to be in the computer lab every day, the schedule allowed teachers to pick and choose a time frame.

During my first year at this school building there were 20 different classes of students. There were five classes at the fifth grade level, five classes at the sixth grade level, five classes at the seventh grade level, and five classes at the eighth grade level. Of the 20 teachers in the building, 11 were veteran teachers that had between 15–35 years of experience and 9 new teachers whose experience ranged from 1–5 years.

The teachers were told that the computer lab was open for three periods each day and that they were welcome to bring their students in to utilize the computers. It was also indicated that the computer instructor would be in attendance while their class visited and used the computer lab. Teachers were required to accompany their students to the lab and stay with them during the entire class period.

Through teacher conversations, it became apparent that the instructors who made use of the computer lab were those who received training in technology and education. As cited in Violato, Mariniz, and Hunter (1989), the teachers' attitude and experience with computers play a major role in deciding how often computers are utilized. According to Hignite and Echternacht (1992), it is critical that teachers possess adequate computer literacy skills to successfully integrate technology into their lessons. As these teachers continued to bring their students into the lab, conversations began regarding their thoughts and views on technology in the classroom. Each of these teachers expressed concerns about their capability for integrating computer technology across the core curriculum.

During lunch breaks and free periods teachers were questioned as to why they did not bring their students into the computer lab. According to their responses, they (a) never received any training, (b) were unprepared to use computers, and (c) believed that their teaching methodology had worked well for them for the last 15 years and saw no reason to change at this time. As Butler and Watrous (2005) explained, technology is not always the educator's answer to the challenges that arise in the classroom, and/or that technology offers a better-quality alternative to every other classroom method or instructional practice. McNierney (2004) informs us that veteran teachers often feel pressure from their fellow teachers and administrators to integrate technology into their classroom. Because these teachers are not prepared to do so, they feel apprehension, frustration, and anger over the use of computers in their classrooms.

For more than a decade researchers have concluded that the success or failure of technology integration is dependent on teacher training and that such training must have certain characteristics (Silverstien, Frechtling, & Miyoaka, 2000). Unfortunately, within the current educational system, there are not enough opportunities for teachers to learn new skills related to technology within their everyday teaching activities (Yamagata, 2003). This study examined the barriers for integrating computer technology into the middle school curriculum.

Significance of the Study

It is generally accepted in the literature that appropriate training of teachers should include the ability to use the computer for personal use (i.e., word processing, grade book) and with students in the classroom (Burkholder, 1995). If classroom teachers

are to meet the need for meaningful integration of computer technology in educational settings, there must be a restructuring of both teacher preparation programs and current classroom practice (Murphy, Richards, Lewis, & Carman, 2005). Today's teachers must not only be accomplished users of technology, but must also be accomplished in the integration of technology into the curriculum (Dockstader, 1999).

The research findings provided a basis for formulating strategies to effectively integrate computer technology into middle school curriculum.

Research Questions

The questions addressed in this study were:

1. What barriers do teachers face when integrating computer technology into middle school curriculum?
2. What are possible solutions and strategies to effectively integrate computer technology into middle school curriculum?

Limitations

This study has the following limitations:

1. The objectivity of the respondents in survey data collected.
2. The participants in the survey from the school districts in Mahoning and Trumbull Counties that decided to not complete the survey and mail it back.
3. The number of teachers who elected to participate in this study.

Delimitations

The following delimitations are recognized:

1. This study was limited to current middle school teachers in the Mahoning and Trumbull County Public School systems.
2. This study relied on the perception of participants on the subject matter.

Definitions of Terms

For the purpose of this study, the following definitions are used:

1. **College/University Course(s).** Actual coursework completed at an institution where hours were awarded at the conclusion of the class.
2. **Concern(s).** Is defined as a matter that relates to or affects oneself; regard or interest in someone or something; a troubled or anxious state of mind arising from solicitude or interest.
3. **Curriculum.** It is a course of study offered by an educational institution.
4. **Efficacy.** Defined as the power or capacity to produce a desired effect; effectiveness.
5. **Faculty.** A staff of teachers located in one particular school building.
6. **Integration.** Is the use of computer technology throughout the core subjects.
7. **Interventions.** Educational instruction provided to improve a situation.
8. **Major subjects.** These are mathematics, science, language arts, reading, & social studies/geography.

9. **Professional in-service.** Training taking place while one is employed in education to improve on ones teaching methods or styles
10. **Staff.** Teachers in one particular school building
11. **Technology.** It allows students to retrieve information not available in the conventional classroom (e.g., computer hardware, software).

CHAPTER 2

LITERATURE REVIEW

Introduction

Almost every school in the nation has computers and access to the Internet. A majority of the schools are running up-to-date software with a student-to-computer ratio of 8-to-1 compared to 11-to-1 in 2002 (Emeagwali, 2004).

Despite the increased availability of computers and support for classroom use (Becker, 2000) it is dubious whether teachers are prepared to use them in inventive ways (Veltman, 2005). With millions of dollars being spent to upgrade technology in schools, progress needs to be made on its access and in increasing the computer skills of faculty (Marx, 2005). Teachers' (a) resistance to change, (b) lack of technology in-service, (c) attitudes, (d) training, (e) time access, (f) lack of expertise, and (g) cost (Kotrlik & Redmann, 2005) are detrimental to the integration of technology into the classrooms. Prospective teachers must take advantage of relevant resources to optimize learning for all children and technology can be an especially constructive means (Meyers & Collier, 2003).

Studies have found that while teachers have an open mind about using computer technology, they feel that they do not have the experience or the understanding of how to use it as an instructional tool (Guerrero, Walker, & Dugdale 2004). Currently, teachers

are in the early stages of integrating computer technology and are more active in the area of exploration. They are not experimenting with the use of technology and have not been innovative in integrating it at the advance level (Kotrlik & Redmann, 2005). A poll by Market Data Retrieval reported more than 50% of teachers receive less than five hours of technology professional development and the training received was often misdirected or insufficient to make a real difference in teacher classroom behavior (Becker, 1999).

Teacher Concerns

Hall and Hord (2001) inform us that change is a process, not an event. In a study by Olafson, Quinn, and Hall (2005), concerns from teachers that attended three semesters of technology classes were as follows:

A partnership with a professional development school would allow candidates (teachers) to develop and utilize their knowledge of both effective teaching strategies and technology skills. The candidates were uncertain about the demands of the technology projects they were expected to complete. Simply reassuring candidates that they would be successful over time did little to resolve their feelings of frustration. By the third semester, however, candidates could review technology products that were completed in the earlier semester. Concerns in the third semester decreased to 17% compared to 71% in the first semester. (p. 95)

Concerns regarding the utilization of technology in the classroom fell to 5% in the second semester as well.

During the two semesters that a doctoral candidate in educational technology was available, the teachers were provided with (a) technology workshops during class time,

(b) additional access to the computer lab, and (c) assistance during open lab times. As the teachers became proficient using computers, their levels of concern gradually began to fade. The candidates could engage in a high level of professional dialogue as evidenced by their rich discourse about specific strategies, why teachers teach the way they do, and how they might use similar technologies in their own classrooms (Olafson, Quinn, & Hall, 2005).

Professional Development

Education has changed due to the increased interest in computer technology over the years. Computers, the Internet, CD-ROMs, and interactive media (Kotrlik & Redmann, 2005) have been introduced into the classroom. Technology impacts not only what is taught and how it is taught but also what students learn and how they learn it (Beckmann, Thompson, & Senk, 1999). This has posed both a challenge and an opportunity for teachers to learn more about computers and software, and how to integrate technology to teach or to enhance their curricula (Gningue, 2003). Willis and Cifuentes (2005) believe that teachers trained at the university level (a) learned and observed live demonstrations; (b) participated in whole-group, hands-on activities; (c) received real-time support; and (d) interacted with technology, peers, and the instructor in an environment that resembles the school classroom. Research has also shown that providing support for the use of technology in the schools is only half the issue; the other half involves changing attitudes and mental structures (Thatcher, 1996).

There is substantial evidence suggesting that teachers' beliefs in their capacity to work effectively with technology—that is their *self-efficacy* for technology integration—may be a significant factor in determining patterns of classroom computer use (Albion,

1999; Oliver & Shapiro, 1993). Compeau, Higgins, and Huff (1999) conducted a longitudinal study with 394 periodical subscribers over a one-year interval to test how the influence of computer self-efficacy beliefs, outcome expectations, and anxiety affected computer use. Their findings provided strong confirmation that computer self-efficacy beliefs had a significant, positive influence on computer use (Wang, Ertmer, & Newby, 2004). When students are successful in the classroom, teachers exhibit professional efficacy (Bandura, 1997).

There are teachers who do not want the uncertainties that go hand-in-hand with implementing computer technology in their classrooms. Many of the teachers question whether students do as well with computer technology as with traditional methods (Gningue, 2003). After researching this topic, it is evident that teachers need to be trained in the areas of materials, methodology, and how they should be utilized in their individual classrooms. The question for educators is how best to employ computer technology in education. As Bassett (2004) quipped, how could technology transform our approach to teaching and learning for the better?

Gningue (2003) conducted a study regarding the effectiveness of long-term vs. short-term technology training for teachers. According to Gningue, teachers do not want to face the uncertainties related to the use of technology in their classroom and often question whether students will do as well with technology as with traditional methods (2003).

Throughout the United States, professional development opportunities involving computer technology are often short in duration. Teachers frequently attend one or two-

day computer workshops where they learn different and innovative ideas, then return back to the classroom and promptly forget what they just learned.

Such forms of training have no continuity, no follow-up, and leave teachers with the decision to continue on their own (Zigarmi, Betz, & Jensen, 1977). Moreover, if teachers are not encouraged to execute what they have learned at these short in-services, change will not occur in the classrooms. If school leaders want teachers to implement computer technology in their classrooms, then monies need to be included in the budget for teachers to attend technology in-services or classes at the university level.

A multi-year study by the Apple Classrooms of Tomorrow (ACOT) showed that significant changes in attitudes among participant teachers happened only during the second year of the project. Teachers felt comfortable using technology in their classrooms only after personal appropriation of the technology tools had taken place (Dwyer, Ringstaff, & Sandholtz, 1991). Key elements that foster a significant and lasting change in attitudes toward technology in the classroom are networking among school teachers and the time to share ideas (Burns, 2002).

Long-term training and activities that encourage collective participation of teachers tend to (a) place more emphasis on content than other activities, (b) provide more opportunities for active learning, and (c) provide a coherent, professional development (Gningue, 2003). In order for teachers to achieve their tech-use rite of passage they need time to learn and to attend classes at the university level. Classes that last 9–15 weeks will provide teachers with the time they need to learn how to be able to integrate computer technology in their classrooms (March, 1999).

Technology Perspectives

Sugar and Warren (2002) tell us that there are three perspectives to technology: assertive, adaptive, and compelling (see Table 1). These perspectives help provide possible solutions to intangible obstacles to technology integration (e.g., lack of confidence, lack of exposure) and to influence educators' beliefs toward technology integration.

Assertive technology encourages and acknowledges teachers' proactive role in technology use and decision-making. *Adaptive technology* requires technology to adapt to teachers' needs, rather than teachers adapting to technology. *Compelling technology* demands technology to facilitate creativity and to solve teachers' specific problems (Sugar & Warren, 2003).

Assertive technology takes the role of the teacher to a new level. Implementing assertive technology allows teachers to assert and affirm their expertise with technology (Sugar & Warren, 2003). However, without prior knowledge in regard to integrating technology, the teacher is at a loss as to how to go about designing or using technology in the classroom.

Adaptive technology is technology conforming to or adapting to a teacher's need. According to Sugar and Warren (2003), technology will conform to the needs of the teacher not the teacher conforming to technology. Adaptive technology invites, encourages, and allows teachers to be proactive in their decision-making about technology (Norman, 1993). For example, Sugar and Warren (2003) contend that a teacher who wishes to include an online grade book for the new semester would ask the following questions:

 Table 1. *Three Technology Perspectives*

Perspective	Possible Solutions
Assertive Technology	<p data-bbox="657 436 1211 468">It is not your fault; it is the designer's fault.</p> <p data-bbox="657 510 1377 541">"Old" technology is fine to use, as long as it is effective.</p> <p data-bbox="657 583 1312 688">I am a designer of technology, rather than a user of technology.</p>
Adaptive Technology	<p data-bbox="657 730 1377 835">Technology will conform to my proposed needs, not the designer's needs.</p> <p data-bbox="657 877 1414 982">It is fine to make "errors" with technology; technology will adapt to my mistakes.</p> <p data-bbox="657 1024 1370 1056">Technology is designed and used to solve my problems.</p>
Compelling Technology	<p data-bbox="657 1098 1284 1129">Effective technology is appropriate and practical.</p> <p data-bbox="657 1171 1344 1276">The sole purpose of technology is to help me be more creative.</p> <p data-bbox="657 1318 1284 1423">The more active user I am, the more effective the technology will be.</p>

(Sugar & Warren 2003)

1. Can this technology fill his/her classrooms needs?
2. Can this online grade book adapt to his/her mistakes?
3. Can this technology solve his/her current problem?

If a teacher positively responds to these questions, there is strong evidence for adopting this new technology. However, if the answers to the above questions are negative, the technology cannot help the teacher and he/she must go back and assess his/her efficacy in regard to their knowledge level in order to utilize this grade book.

Compelling technology is appropriate and practical. Teachers need to have had technology in-services or classes at the university level to use technology in a compelling manner. These in-services and classes help the teacher to be a more active user of technology and at the same time, become effective in utilizing technology in the classroom.

Integration of Technology

Bitner and Bitner (2002) have developed eight important areas of consideration that allow teachers to successfully integrate technology into the curriculum. These areas of consideration are (a) fear of change, (b) training in basics, (c) personal use, (d) teaching models, (e) learning based, (f) climate, (g) motivation, and (h) support. The fear, apprehension, and distress that educators claim to have must be carefully approached. Adults do not accept change lightly. Using technology as a teaching and learning tool in the classroom involves both changes in classroom procedures and the use of often-unfamiliar technologies. Allowing teachers to overcome their fears, concerns, and anxiety is curtailed to the success of the program (Bitner & Bitner, 2002). The decision to

purchase computer hardware and software is a top priority to building administrators, and is often done without input from teachers. Consideration is rarely given to their thoughts, concerns, fear, and skills in utilizing technology in the classrooms. Consequently, teachers are intimidated and threatened due to the change technology has thrust upon them.

In order to integrate technology across the curriculum teachers must have a rudimentary understanding of how to operate a computer (Bitner & Bitner, 2002). They must (a) know how to engage the computer, (b) understand how to operate simple devices (e.g., CD drives, printers, mouse), and (c) be able to use a few basic computer program commands (e.g., file, edit, view, insert, format). Teachers must understand these commands so that they can explain them to their students. According to Bitner and Bitner (2002), it is easy to overlook the need for very basic training of our teachers when it is assumed that their computer knowledge is at some standard level.

Fostering the personal productivity skills of the teachers would be beneficial in helping alleviate teachers' fear of the computer. As teachers become familiar with computer programs (e.g., Word®, Excel®) they will become aware that computers can assist them in their jobs.

Technology must be modeled in the classroom to assist the students in learning. Teachers attending in-services or university classes would become proficient in choosing a variety of software programs that students could utilize across the board. According to Bitner and Bitner (2002), teachers need to experience available programs such as PowerPoint®, Publisher®, and HyperStudio® in order to help themselves and students with the organization and presentation of information.

Use of computer technology in the classroom is a way to reinforce the importance of learning in the classroom. Learning computer technology allows students and teachers to engage in the learning process. Technology changes faster than we would like. What our students learn today is not necessarily what they will be using in their future jobs. It is important for students to learn how to search and discover knowledge, actively communicate with others, and solve problems so that they can become productive, life-long members of our society (Bitner & Bitner, 2002). Without proper technological education our teachers will be ill prepared to give their students the skills they need to go out and perform their future jobs.

There must be a climate in the classroom that allows both teachers and students to feel comfortable enough to experiment with computers without fear of failure. Failure is sometimes inevitable. However, it is the climate in the classroom that allows students to turn their failures into successes. The climate must be one that allows students to feel free to make mistakes when using the technology in their classrooms without fear of any loss of standing or respect from students, peers, or superiors (Bitner & Bitner, 2003).

Teachers must be motivated to learn how to integrate technology into their classroom and core curriculum. They must be motivated to attend computer technology in-services and classes at the university level. Bitner and Bitner (2002) tell us that administrators must be prepared to demonstrate the importance of integrating technology by providing incentives such as extra pay or release time. They should also show their willingness to be an active, participating partner in the change process.

Teacher support is imperative for the successful implementation of technology in the classroom. Support in regard to both the technical area and in continuing educational

technology classes must be present for teachers to become confident and successful in the classroom.

Two major studies completed by the Office of Technology Assessment (OTA, 1995, 1998) inform us that teachers and educational researchers over and over again cite the classroom teacher as essential to the full integration of technology in their classrooms. According to Gningue (2003), the following questions need to be asked and answered:

1. What type of professional development can best change teachers' attitudes and beliefs toward the use of computer technology in the classrooms?
2. Is it best to learn slowly over a period of time (as in classes at the university) or do a small number of concentrated workshops suffice to train teachers?

This study examined two themes regarding computer technology. The first was the preparation or lack of preparation received by teachers regarding the integration of technology into their core curriculum. The second theme was what encouraged them and what impediments they found regarding the integration of technology across the core curriculum.

CHAPTER 3

RESEARCH METHODS

Population and Sample

The targeted population for this surveyed was middle school teachers. Middle school teachers refer to the teachers who instruct students in any grade five through eight. The school districts, the participating schools, and the surveyed teachers in Mahoning and Trumbull Counties were randomly chosen to participate in this study. These counties have similar characteristics and the school districts often come together to offer in-services to each other. There were eight schools from Mahoning County and eight schools from Trumbull County selected for this study. From these schools, 200 teachers were chosen for ease of accessibility and because both counties have a similar number of middle schools. This study analyzed the barriers to and possible solutions for integrating computer technology into middle school curriculum.

The targeted population for the pilot study was middle school teachers in one school within Columbiana County. This middle school had 21 teachers. Since this county is located adjacent to Mahoning County, it provided a similar population to use for a sample study. The feedback from this pilot study was used to make necessary revisions in the survey instrument.

Instrumentation

The instrumentation for this study involved mailing a survey to middle school teachers in Mahoning and Trumbull Counties. Each participant received a survey (see Appendix A) and a self-addressed, stamped envelope to encourage participation in the study. The survey was mailed to the school address of each teacher. A letter was included in the package that (a) encouraged teachers to participate in the study, (b) defined the purpose of the research, and (c) provided the necessary details about the survey (see Appendix B). The informed consent form explained the value of participant input and confirmed the researcher's commitment to safeguard the confidentiality of the data throughout the research process (see Appendix C). Prior to the distribution of the surveys, the Human Subjects Research Committee at Youngstown State University granted permission to conduct the study (see Appendix D).

The survey contained questions that dealt with teacher background characteristics, demographics, teaching experience, computer proficiency, personal computer use, professional development in-services, and college/university classes. Teachers were then asked (a) to describe their latest or most current in-services or classes regarding technology issues, (b) the length of each in-service or class, (c) the objective of each in-service or class, (d) if they felt proficient enough to utilize the knowledge acquired in their classrooms, and (e) what if any impediments they faced during their day. The survey also included questions related to each teacher's environmental support (e.g., equipment access, technical support, administration support, curriculum support).

Design of the Study

This study used a mixed methodology of both quantitative and qualitative approaches. The respondents used both types of data to answer the questions in this study. The letter “M” for Mahoning County and “T” for Trumbull County were used to code surveys for each county. Each school in each county that received a survey was assigned a letter; each individual survey was also coded. Each school received 10 letters. For example, a school in Mahoning County was given the following “MA1” code. When returned, this code (a) told the researcher that the survey came from Mahoning County, (b) identified the school district, and (c) determined which number out of 10 was returned. Using Excel©, the researcher calculated how many surveys were sent to each of the schools in each county and the number of responses received from each school. A review of this data helped the researcher ascertain if a second mailing was needed.

An Excel© data file was created to compile the survey data. In a classroom equipped with computers, 10 teachers completed the data entry. The data was analyzed using both quantitative and qualitative analytical techniques.

Data Analysis

Survey items 1 through 6 provided data for demographic variables. Survey items 7 through 16 provided data on the use of computers in instruction and the type and extent of training received in the use of computers in the classroom. Survey items 18 through 26 rated respondents’ perception on the use of computers in the classroom. Moreover, qualitative data was generated from items 27 through 34. To answer the research

questions of this study, the data was analyzed using descriptive statistics, graphs, charts, and qualitative thematic interpretation techniques.

Based on an item analysis of the pilot study, it was determined that the survey was valid. The results (a) reflected what the researcher would find in the larger study and (b) proved the study would measure what the researcher wanted.

The pilot study yielded a 75% return rate from South Middle School in Columbiana County and revealed many barriers to integrating computer technology into a middle school curriculum. The largest barrier was the lack of computers within the school building—in both the individual classrooms and in the computer lab. The study also revealed that a large number of teachers do not integrate technology for more than four hours a week due to the lack of computers. Also, teachers spent a minimum amount of time at in-services and/or university classes with a large number having only received one class at a university. In regard to in-services, a large number of teachers have only received one to five hours of training. The responses also revealed a diverse number of suggestions to possible solutions as to what encourages them to utilize computer technology in their middle school curriculum.

CHAPTER 4

DATA ANALYSIS

This chapter provides a statistical analysis of the qualitative data retrieved from the surveys completed by middle school teachers in Mahoning and Trumbull Counties. Participants were asked to identify what factors encouraged them and what impediments they experienced regarding the integration of computer technology across the curriculum.

During the last quarter of the 2007-08 school year, this researcher hand delivered 397 information packets to 10 schools within Mahoning and Trumbull Counties.

Each packet contained:

1. A coded survey geared toward teachers at the middle school level (grades five, six, seven, and eight).
2. A letter of introduction that explained the research goals and asked the teachers for their cooperation in completing the survey.
3. An Informed Consent Form that elucidated (a) the purpose of the survey, (b) the amount of time teachers would spend completing the survey, and (c) the contact information for both the researcher and the Office of Grants and Sponsored Programs at Youngstown State University.
4. An envelope for the return of the completed survey.

At each school, this researcher (a) spoke with a principal or school secretary, (b) elicited their support to furnish the packets to the middle school teachers, and (c) agreed upon a date to return to retrieve the surveys

There was a 43.07% return rate of surveys. Mahoning County schools yielded a return rate of 49.25% and Trumbull County schools had a 37.82% return rate. Of the 171 responses, 78% were from females and 22% were from males. Of these respondents, 71% indicated that their schools were located in a suburban setting, 15% said an urban setting, 13% reported that their school was located in a rural setting, and one participant marked other as their choice of community with an explanation of “changing demographics.”

According to the survey results, 33% of the teachers were 51–60 years of age, 29% were 31–40 years of age, 21% were 21–30 years of age, and 17% were 41–50 years of age (see Figure 1). Of these teachers, 69% held a master’s degree with additional course work or hours and 31% had obtained a bachelors degree. None of the participants reported holding a doctorate degree.

Of the survey participants, 43% had 1–10 years of teaching experience, 28% had 11–20 years of experience, 18% had 21–30 years of experience, and 11% had taught 31 years or more (see Figure 2). Of the participants, 57% were employed at their current school for 1–10 years, 23% were employed at their school for 11–20 years, 15% were employed at their current school for 21–30 years, and 5% were employed at their school for 31 years or more (see Figure 3).

Since middle school teachers teach more than one grade level of students during their day, there was a high response of grade levels taught. The answers indicated that

Figure 1. Participants' Range of Age.

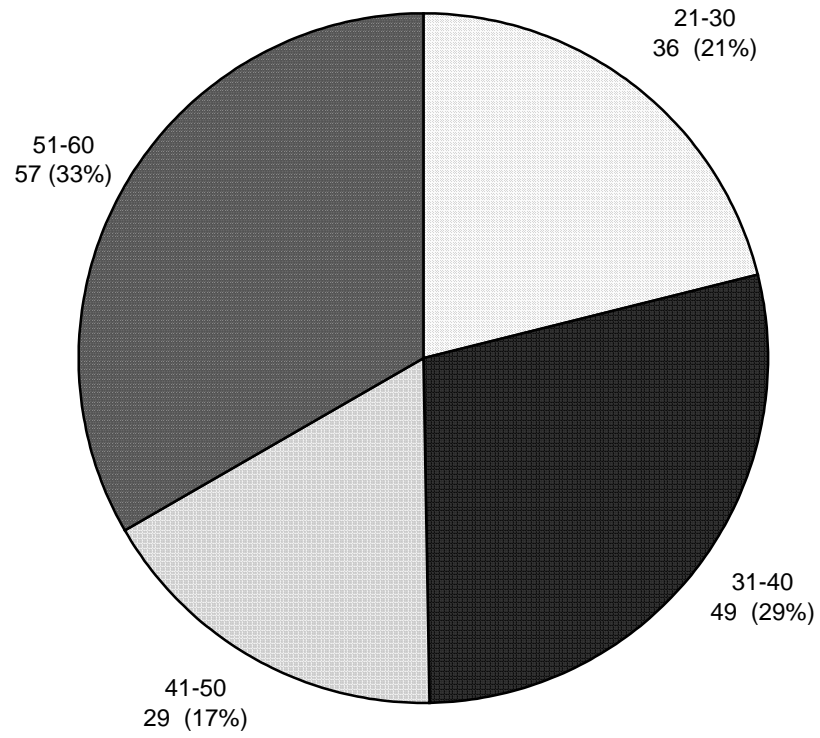


Figure 2. Participants' Total Years Teaching Experience.

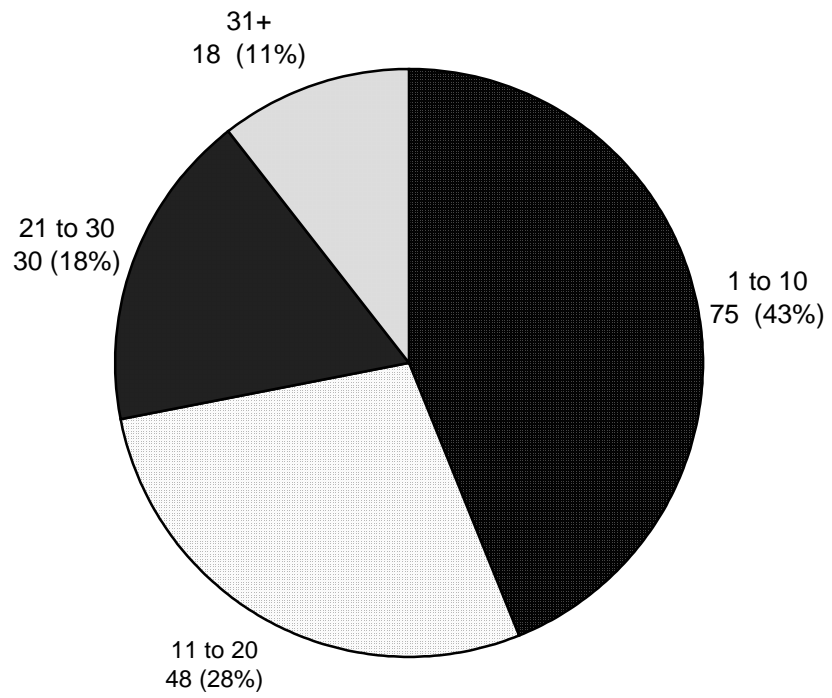
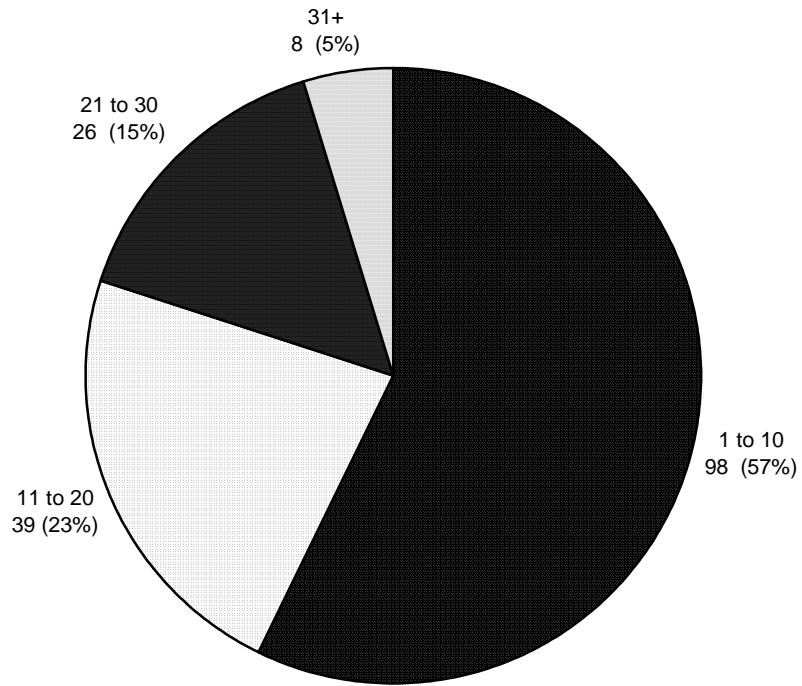


Figure 3. Number of Years Participants Taught at Current School.



31% of the teachers taught eighth grade, 27% of the teachers taught seventh grade, 23% of the teachers taught fifth grade, and 19% of the teachers taught sixth grade (see Figure 4).

According to the data, computer use within the classroom was varied. Of the participants, 45% have used computers in their classroom for 1–5 years, 32% have used them for the last 6–10 years, 15% had 11–15 years of computer use within their classroom, and 8% of the participants said they have never used a computer in their classroom to integrate technology throughout the major subjects (see Figure 5).

The percentages of responses from the participants regarding major subjects taught were closely related to each other. The data revealed that of the participants, 28% taught language arts, 28% taught Math, 22% taught science, and 22% taught history (see Figure 6).

Participants were asked to indicate the number of computers in their individual classroom. Their responses indicated that 42% had 1–4 computers in their classroom, 34% had one computer for the teacher, 19% said they had 5–10 computers, 4% had 11 or more computers, and 1% said they had no computers in their classroom (see Figure 7). When participants were asked how many hours they spent per week utilizing computers in the major subjects within their classrooms per week, 49% said 1–4 hours, 24% said 11 or more hours, 20% said 5–10 hours, and 7% responded that they did not use the computers in their classroom with their students (see Figure 8).

Participants were asked how many hours per week their students used the computer lab in their school building. The responses indicated that 55% took their students into the computer lab 1–4 hours every week, 36% said they never took

Figure 4. Grades Currently Teaching.

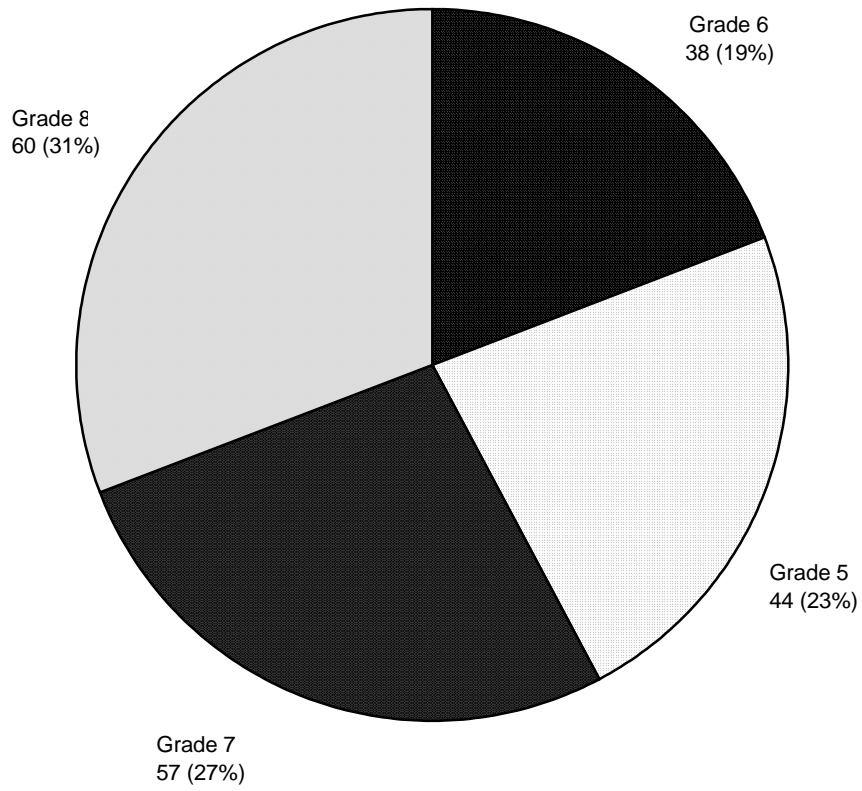


Figure 5. Number of Years Participants Used Computers in Their Classroom.

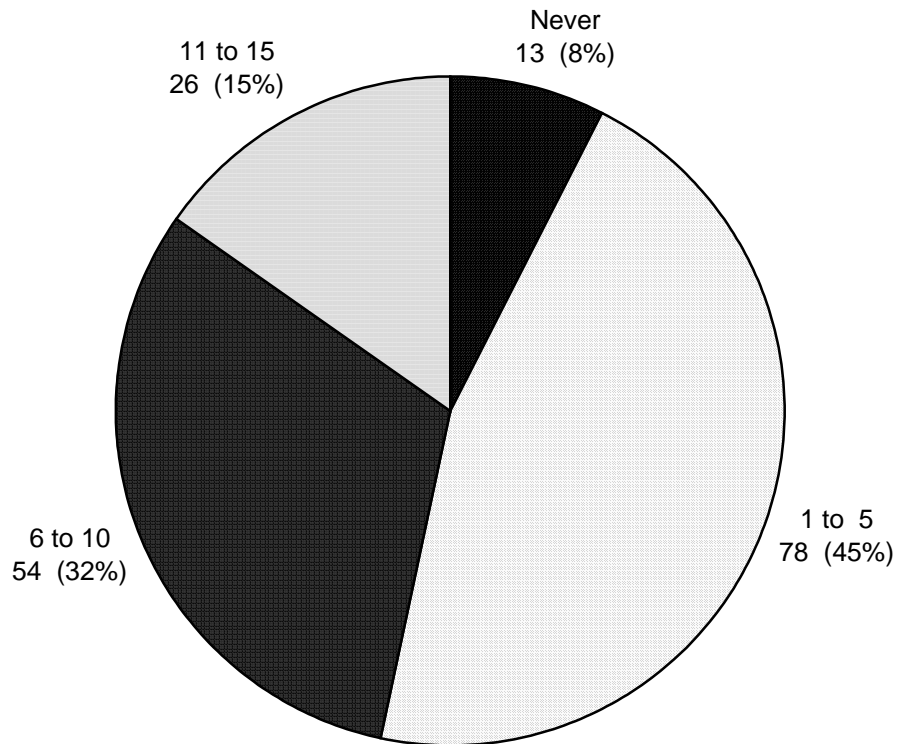


Figure 6. Subjects Taught by Participants.

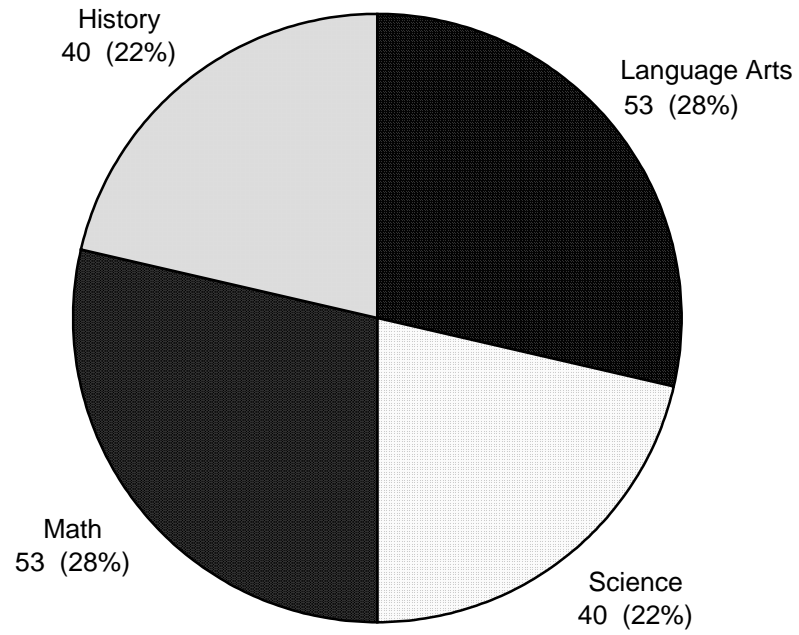


Figure 7. Number of Computers in Participants' Classrooms.

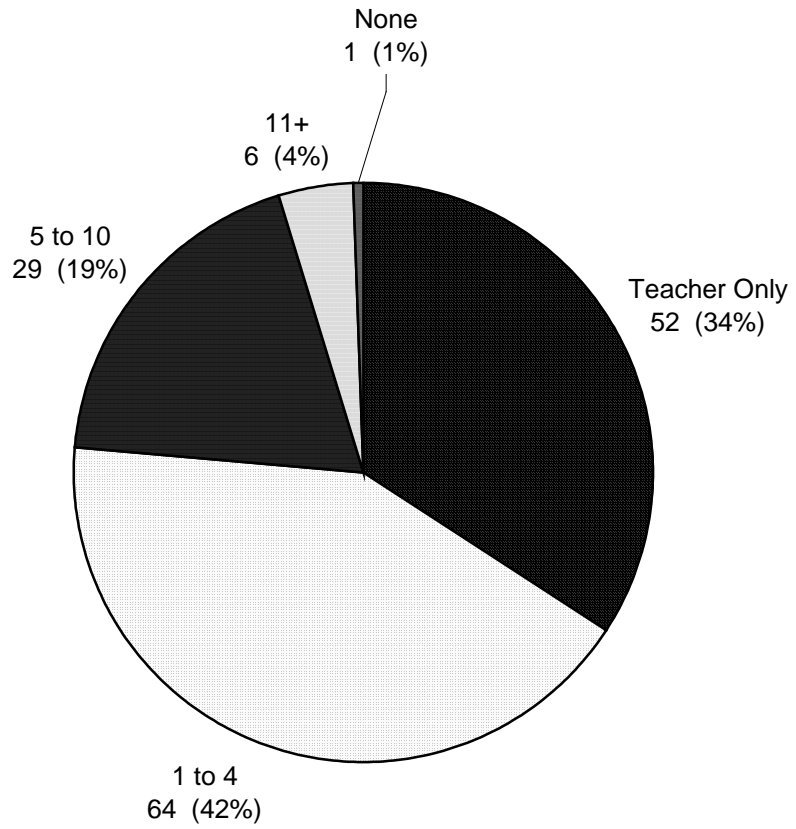
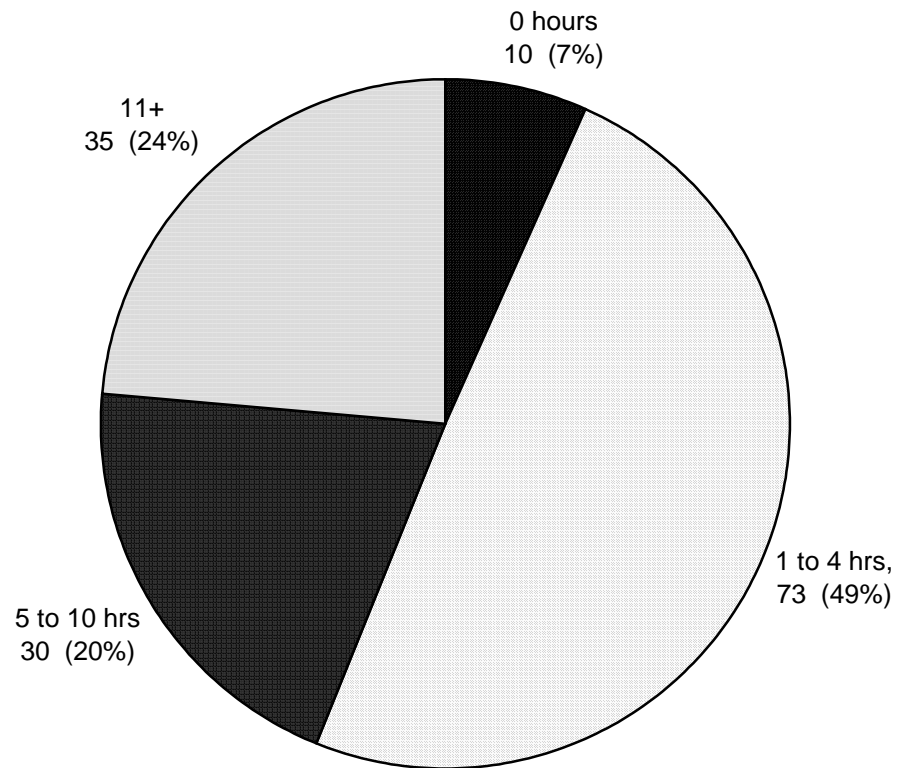


Figure 8. Number of Hours Each Week Participants Used Computers in Their Classrooms.



their students into the computer lab, 5% said they used the computer lab over 11 hours a week, and 4% said their students used the computer lab 5–10 hours each week (see Figure 9.).

According to the survey data, 91% of the respondents received some type of computer training while 9% did not receive any computer training. When asked about the type of training received, 64% of the participants responded that they had received training through professional development in-services, 35% said they took classes at a university or college, and 1% indicated that they had training outside of in-services or university/college classes.

Those that participated in professional development in-service programs received a variety of credit training. Of those surveyed, 39% obtained 1–5 hours of training, 36% received 6–10 hours of training, 12% received 15–20 hours of training, 9% received more than 21 hours of training, and 4% indicated they had not received any technology training for professional development. When asked about course work hours taken at universities or colleges, 59% of the participants said they completed 1–5 hours of classes, 15% finished 6–10 hours of classes, 14% reported never taking any university or college classes, 6% took 15–20 hours of classes, and another 6% had over 21 hours of classes.

Participant responses to Questions 18–26 are summarized in Table 2. This analysis reflects only the responses obtained from participants and excludes those participants who chose not to respond. The nine survey questions were designed for participant response according to the following format: “SA” for Strongly Agree, “A” for Agree, “U” for Undecided, “D” for Disagree, and “SD” for Strongly Disagree.

Figure 9. Number of Hours Each Week Participants Used Computers in the Computer Lab.

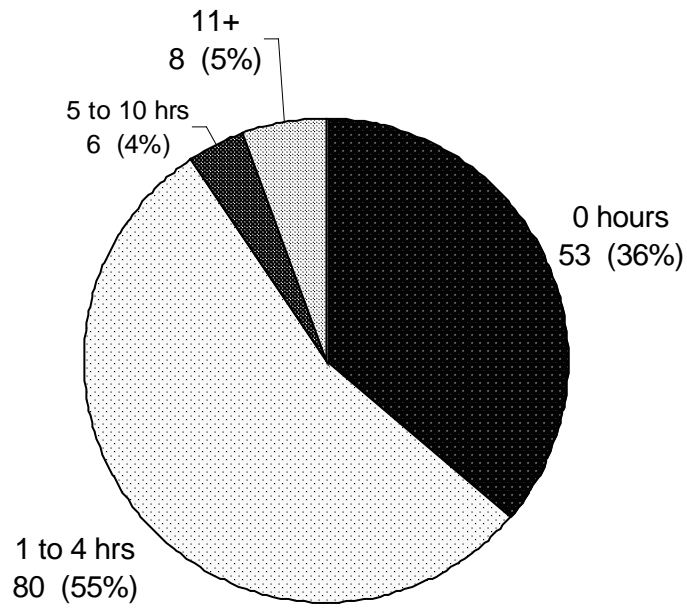


Table 2. Participants' Responses/Percentages to Survey Questions 18–26

Question	Strongly		Undecided	Disagree	Strongly	No
	Agree	Agree			Disagree	
18. I think that working with computers in the class-room would be enjoyable and stimulating.	54 (35%)	86 (56%)	12 (8%)	2 (1%)	0 (0%)	17
19. If given the opportunity I would like to learn how to use computers in the classroom.	50 (32%)	93 (60%)	9 (6%)	0 (0%)	3 (2%)	16
20. I do not use computers in my classroom as I have not received any training in that area.	6 (4%)	10 (6%)	18 (12%)	49 (32%)	72 (46%)	16

Table 2 (continued). Participants' Responses/Percentages to Survey Questions 18–26

Question	Strongly		Undecided	Disagree	Strongly	No
	Agree	Agree			Disagree	
21. I feel that the instruction I have received from in-services has taught me to successfully integrate computer technology into the major subjects.	16 (10%)	59 (39%)	41 (26%)	33 (21%)	7 (4%)	15
22. I feel that classes at my university and technology in-services have trained me in the basics of integrating computer technology with the major subject.	21 (14%)	70 (45%)	33 (21%)	20 (13%)	11 (7%)	16

Table 2 (continued). Participants' Responses/Percentages to Survey Questions 18–26

Question	Strongly		Undecided	Disagree	Strongly	No
	Agree	Agree			Disagree	Reply
23. I do not like to integrate computer technology with the major subjects because I am apprehensive about change that accompanies the integration of computer technology.	4 (3%)	9 (6%)	29 (19%)	51 (33%)	60 (39%)	18
24. The climate in my school building in regard to integrating computer technology with the major subjects is one that is warm and welcoming.	35 (24%)	53 (37%)	27 (19%)	23 (16%)	6 (4%)	27

Table 2 (continued). Participants' Responses/Percentages to Survey Questions 18–26

Question	Strongly		Undecided	Disagree	Strongly	No
	Agree	Agree			Disagree	
25. Computer technology can be a useful instructional aid in almost all subject areas.	77 (59%)	49 (37%)	5 (4%)	0 (0%)	0 (0%)	40
26. I feel competent constructing and implementing project based learning lessons in which students use a range of computer technology.	30 (20%)	53 (36%)	27 (18%)	29 (19%)	10 (7%)	22

Question 18 elicited responses from participants in the use of computer technology in the classroom as enjoyable and stimulating learning tools. Analysis of the answers revealed that 56% of the participants agreed, 35% strongly agreed, 8% were undecided, and 1% disagreed. There were 17 participants who did not respond to this question.

Question 19 attempted to determine participants' perception of how they would use computer technology in the classroom. Responses showed that 60% of the participants agreed, 32% strongly agreed, 6% were undecided, and 2% strongly disagreed. There were 16 participants who did not respond to this question.

The non-use of computer technology in the classroom due to lack of training was explored in Question 20. Responses revealed that 46% of the participants strongly disagreed, 32% disagreed, 12% were undecided, 6% agreed, and 4% strongly agreed. There were 16 participants who did not respond to this question.

Question 21 sought a response to the success of participant, in-service training on the integration of computer technology in the classroom. The data revealed that 39% of the participants agreed, 26% were undecided, 21% disagreed, 10% strongly agreed, and 4% strongly disagreed. There were 15 participants who did not respond to this question..

Question 22 explored participants' feelings regarding university training to successfully integrate computer technology in the classroom. The responses indicated that 45% of the participants agreed, 21% were undecided, 14% strongly disagreed, 13% disagreed, and 7% strongly disagreed. There were 16 participants who did not respond to this question.

Question 23 attempted to determine participants' apprehension regarding the use of computers in the classroom. The answers indicated that 39% of the participants strongly disagreed, 33% disagreed, 19% were undecided, 6% agreed, and 3% strongly agreed. There were 18 participants who did not respond to this question.

Question 24 elicited feedback regarding the climate in their school building when attempting to integrate computers in their classrooms. Analysis of the responses indicated that 37% of the participants agreed, 24% strongly agreed, 19% were undecided, 16% disagreed, and 4% strongly disagreed. There were 27 participants who did not respond to this question.

Question 25 examined how participants felt about using computers as an instructional aid. The answers indicated that 59% of the participants strongly agreed, 4% were undecided, and 37% agreed. There were 40 participants who did not respond to this question.

Question 26 generated responses from participants who constructed and implemented project-based learning lessons using computer technology. Responses showed that 36% of the participants agreed, 20% strongly agreed, 18% were undecided, 19% disagreed, and 7% strongly disagreed. There were 22 participants who did not respond to this question.

The research questions in this study pertained to identifying barriers and possible solutions to integrating computer technology into middle schools. Questions 27–29 focused on (a) factors that encouraged participants to integrate technology, (b) barriers to technology the participants faced on a daily basis, and (c) factors that would help them decide what type of additional training they would need to help them better integrate

computer technology. Their responses fell within nine categories with participants indicating both positive and negative responses. These categories were Training, Students, Cost, Equipment, Peers, Time, Course of Study, Other, and No Response (see Table 3). Within each of these categories, responses ranged from just one-word to multiple replies.

Question 27 dealt with factors that encouraged participants to integrate technology throughout their middle school curriculum (see Appendix E). Of the participants, 74 indicated that past training and/or additional training was a key factor. The remarks regarding training were positive and included comments such as (a) time off to attend classes, (b) the principal bringing in computer technology experts to help them in the classroom, (c) receiving updated information in regard to training, (d) training sessions which allowed staff to learn together, (e) college courses that would help them to become competent with computer technology, (f) training to allow the participant to assist their students, and (g) time to observe teachers already competent in the area of integrating computer technology into the curriculum.

Responses from 56 participants indicated that students were a positive influence on their decision to integrate technology because they enjoyed learning how to use computer technology in the classroom. Other participants commented that computer technology (a) enhanced student learning, (b) motivated students to complete projects when they were permitted to use computers, (c) maintained student interest, (d) contributed to student enjoyment when using computer technology and (e) expanded subject area learning.

Table 3. Number of Participants Responding to Survey Questions 27–29

Category	Question 27	Question 28	Question 29
<i>Training</i>	74	32	10
Students	56	13	34
Cost	0	8	14
Technology Equipment	55	119	22
Peers	14	0	0
Time	0	23	40
Course Content	0	0	69
Other	5	1	0
No Response	7	6	15

According to the responses, technology equipment was a strong factor with the participants. Data showed that out of 55 participants, 16 provided negative comments about their equipment because it either did not work or they needed additional computers in their school building. The remaining 39 participants gave positive replies that stressed the value of computers, computer software, and printers when integrating technology into the major subjects.

There were 14 responses to Question 27 that cited peers as a positive factor that encouraged the use computer technology in the classroom. Analysis of the data revealed that the participants enjoyed learning computer technology with their peers and valued them as they worked together as a support team.

The categories time and course content did not play a factor in encouraging participants to integrate computer technology throughout the major subjects. The five responses that fell under the category other were (a) society, (b) the administration, (c) State Standards, (d) the difficulty of finding activities that students would enjoy, and (e) students wasting their time while on the computers. There were 7 participants who did not respond.

Question 28 addressed the subject of barriers that participants came across while integrating computer technology throughout the major subjects (see Appendix F). According to the survey data, 119 participants marked equipment as the major barrier to computer use. Of the 119 responses, 63 participants requested a need for additional computers, 36 participants cited damaged computers as a barrier, while 11 participants said their equipment was outdated, 8 participants mentioned a need for new software, and 1 participant requested additional technology support.

Responses from 32 participants revealed training as a barrier to integrating computer technology in their classrooms. Further analysis revealed that these participants requested additional training.

Time was cited as a barrier to technology integration by 23 participants. The responses indicated that there was either no time during the day to access the computer lab or that additional time was needed to work on projects and teach.

Students were considered a barrier to 13 of the participants because they lacked the ability and the knowledge to access computers. One response stated that the lack of home computers prevented teachers from integrating technology into the classroom. There were 8 participants that stated cost was a barrier and 6 participants did not respond. Peers and course content were not considered barriers. All of the responses to Question 28 were negative because they were barriers that prevented the participants from integrating computer technology throughout the major subjects.

Question 29 generated positive remarks about the factors participants felt would help them decide on additional classes or in-services (see Appendix G). According to the data, 69 participants felt that the course content of a class or in-service was a major factor when deciding whether to enroll for additional training. Additional factors were (a) acquiring knowledge to create web pages, (b) using computer technology in the classroom, (c) integrating State Standards, (d) professors with middle school teaching experience, (e) topic of the class or in-service, and (f) experiencing new technologies such as I-Pods[®] and Wikis[®].

Time as a factor elicited responses from 40 participants. Their responses included (a) the length of the training; (b) the dates offered; (c) the time of day the training was

offered; and (d) the time needed to participate in a class or in-service while focusing on career, family, and other obligations.

Analysis of the data revealed students as a factor for 34 participants when deciding what class to enroll in for future computer training. The main concern for these participants was if students would benefit from the training they received in utilizing computer technology.

According to the survey data, 22 participants indicated that technology equipment was a factor when considering what types of training to enroll. These participants were concerned that their schools lacked the technology equipment needed to implement their newly acquired knowledge.

Cost was an indicated a factor for 14 participants prior to enrolling in some type of training. The training itself was a factor for 10 participants who cited the location of in-services, the skill of the instructor, and the type of credit received for the training. The peer factor did not come into play and 15 participants had no response to this question

Question 30 asked participants to describe the most recent professional development activity regarding the use of computer technology in which they had participated (see Appendix H). Participants were asked to provide the year of the activity and to explain why it was (or was not) useful to them as teachers.

Analysis of the data revealed that 115 participants received in-service training in a variety of different programs. Of the respondents, 102 claimed that the in-service was useful because they were able to utilize the computer training in their classrooms and implement it in various ways (i.e., lesson plans, grade books, special education classes, science classes, language arts classes). The data also revealed that 25 participants found

the in-services useful to students because they (a) benefited from the knowledge the participants received from the in-services, (b) found the various software programs easy to implement, and (c) enjoyed working with computer technology in the classrooms. There were 5 participants that found the class useful because they were able to share what they learned with other staff members. The data also showed that 5 participants did not reply to the question.

According to 29 participants, the in-services they attended were not useful. Of this number, 10 participants said the in-services were not useful because they lacked the equipment in their classrooms to utilize the knowledge they received, 9 participants found the training insufficient or not effective because it was not relevant to classes they taught, 7 participants said the question was not applicable, and 1 participant claimed not to remember (see Table 4).

Question 31 dealt with the most recent computer technology class participants took at a college or university (see Appendix I). Respondents were asked for the year they enrolled in the class and if they found the class useful (or not useful) to them and why. According to the data, 56 participants took some type of class at a university or college that dealt with the use of computer technology.

The data also revealed that 39 participants found the class was useful. Of these participants, 32 found the information they learned useful in the classroom. According to 2 participants, the students enjoyed utilizing the computer technology. There were 3 participants that marked enrolling in a class but did not say why the class was useful.

Table 4. Participants' Responses to Question 30

Year	Number of		Not	
Participated	Participants	Useful?	Useful?	Type of In-Service
2003-04	9	8	1	Gradebook, PowerPoint/Word, Video Conferencing
2004-05	8	1	6	Distance Learning, ELMO, ESIS, YET Training, No title given, SmartBoard
2005-06	18	17	1	County Liaison, ELMO, Homeroom.com, In-service Read 180, Interwrite, No title given, Page/PowerPoint/Word, Study Island, Technology in the classroom, Textbooks Online, Web Search,
2006-07	31	20	9	Airliner, ESIS, Grade Book, QUIA/Wiki, Technology for Curriculum, SmartBoard, Study Island, Smart Board, Microsoft, Searching Websites, Think Wave, Webcam

Table 4 (continued). Participants' Responses to Question 30

Year Participated	Number of Participants	Useful?	Not Useful?	Type of In-Service
2007-08	49	44	5	Airliner, College Entrance Exam Workshop, ELMO, ESIS, FEROCBM Workshop, JASOM Project, No title given, Research on the Web, TCESC, Thinking Reading, SmartBoard, Subjects visits on the Web, Study Island, Turning Point, World Book Online, Web Design,
No Dates Listed	18	12	6	Achievement Testing, Crick/Cloze Pro, FEROCBM, Gradebook, Mini Course Workshop, Pod Cast/Websites, Study Island, Success Maker, Technology In-Service, Training of Computers, Turning Point/PowerPoint, SmartBoard, Web Design, Web Quest, Workshops at School
No Response	8			

Further analysis of the data revealed that 13 participants found the classes not useful to them in their classrooms and 8 participants said the university class itself was not useful. There were 5 participants that remarked that they lacked the equipment in their classroom to use what they learned at their university classes. Survey data also revealed that 13 participants marked not applicable as a response, 14 participants said they have never enrolled in a technology class at the university level, 4 participants did not remember the title of their class, and 3 participants provided the titles of the university classes they attended with no additional information (see Table 5).

Question 32 asked participants if their schools provided support to integrate technology in their classroom and what type of support was offered (see Appendix J). Analysis of the data revealed that 120 participants claimed they received various types of support from their school. Of that number, 48 participants received support through training, 46 participants received support through their technology staff, and 25 participants received support through their technology equipment. There were 7 participants who each gave two reasons regarding the type of support received and 1 participant that did not reply.

On the other hand, 45 participants said that they did not receive support from their school to integrate technology into their classrooms. Responses showed that 18 participants did not receive any training and 5 participants received no support from their technology staff. There were 3 participants that did not have any technology equipment to use in their classrooms and 19 participants had no response. There were 7 participants who felt the question did not apply to them and 3 participants who chose not to answer the question (see Table 6).

Table 5. Participants' Responses to Question 31

Year Participated	Number of Participants	Useful?	Not Useful?	Type of In-Service
1980-81	1	1		Does not recall
1992-93	3	2	1	Keyboarding-simple computer programs, Multi-media, Technology for Teachers
1995-96	2	1		Internet classes, No title given.
1997-98	3	1	1	Computer Technology, PowerPoint for Classroom, Technology for Teachers
1999-00	3	4		Basic Technology, HyperStudio Class, Windows
2001-02	5	3	1	Earned a Bachelor's Degree, Technology in the Classroom, Webpage designs
2003-04	9	7	2	Basic Computer, Graduate English Professional Writing, Technology for Teachers, Web Design
2005-06	11	9	2	ODE Standards, Website Design, Education Technology, Technology for Teachers, Dream Weaver, The Web

Table 5 (continued). **Participants' Responses to Question 31**

Year Participated	Number of Participants	Useful?	Not Useful?	Type of In-Service
2007-08	10	9	2	Instructional Design, Integrating technology, New Technology, Technology for Education, Excel
N/A	9	5	4	Basic Microsoft, Designing Websites, Excel, Technology
N/A	13	N/A	N/A	N/A
Never Took Classes	14	N/A	N/A	N/A
Too Long Ago to Remember	4	N/A	N/A	N/A

Table 6. Type of Support Provided to Participants

Technology Support?	Number of Participant Replies	Training	Technology Support Staff	Technology Equipment Provided	No Reply Given
Yes	120	48	46	25	1
No	45	18	5	3	19
N/A	7	0	0	0	7
No Response	3	0	0	0	0

Question 33 asked if principals allowed time for teachers to network regarding the integration of technology (see Appendix K). According to 89 participants, their principals allowed them time to network but did so in different ways. Data from 37 of the 89 participants revealed that common planning periods allowed teachers to network with other teachers. Staff meetings allowed 29 participants to network and in-services provided networking time for 22 participants. There was one positive response that did not provide elaboration.

Further analysis of Question 33 revealed that 70 participants indicated that their principals did not provide support regarding networking in their school building. According to the data, 18 participants said they had no time in their schedule to network. There were 52 participants who marked no to Question 33 without explanation and 4 participants answered with a no response. The data also revealed that 9 participants did not think this question was applicable to them (see Table 7).

Based on dissertation committee recommendations, this researcher embarked upon testing several hypotheses with regard to computer use in this sample. A number of T-tests were conducted to obtain strategies to guide educational leaders when determining which gender and age group of teachers would utilize computer technology more often in the classroom. A number of questions were raised:

1. Is there a difference between age and the amount of time the participants integrated computers in the classroom on a weekly basis?
2. Is there a difference between gender and amount of time the participants integrated computers in the classroom on a weekly basis?

Table 7. Networking With Regard to Integrating Computer Technology

Time to Network Integrating Computer Tech?	Number of Participant Replies	Common Planning Periods	Staff Meetings	In- Services Provided	No Reply Given
Yes	89	37	29	22	1
	0	No Time	0	0	0
No	73	21	0	0	52
N/A	9	0	0	0	9

3. Is there a difference between counties in the amount of time the participants integrated computers in the classroom on a weekly basis?

None of the hypotheses were rejected.

Analysis of the data regarding gender indicated that since the P value is greater than the alpha, ($\alpha = .05$) this researcher did not reject the null hypotheses. There is insufficient evidence that either gender used computer technology in their classroom more or less than the other gender. Therefore, as $.375 = P(T \leq t) > .05 = >$ this researcher did not reject the null hypothesis. The null hypothesis of the mean of the males' weekly use of computer technology is the same as the mean of the females. The alternative hypothesis is that the mean of the males' weekly use of computer technology is different than the females' weekly use of computer technology.

Analyzing data regarding computer use in hours and age produced results that the P value of the F test is greater than the alpha significance level ($\alpha = .05$). There is not enough significant evidence to reject that null hypothesis that the hours of computer use was not equal among age group. Therefore, as $.285 = P(F \leq f) > .05 = >$ this researcher did not reject the null hypothesis. The null hypothesis is that the means of computer use time for all age groups was equal. The alternative hypothesis was that one age group's use of computer time was different from the rest.

While analyzing data regarding Mahoning and Trumbull Counties, the P value is greater than alpha ($\alpha = .05$), therefore, this researcher did not reject the null hypotheses. There is insufficient evidence to prove that participants in either Mahoning or Trumbull County utilized computer technology more hours per week, therefore, as

$.219 = P(T \leq t).05 = >$ this researcher did not reject the null hypothesis. The null hypothesis was that the average hours of computer use in Trumbull County was equal to the average of computer use in Mahoning County. The alternate hypothesis was that participants in Trumbull County used computer technology more hours per week than participants in Mahoning County.

The findings in this chapter provided a statistical analysis of the quantitative data and a descriptive analysis of the qualitative data retrieved from the research surveys. Data analysis was performed using Microsoft Word and Excel to produce charts and tables.

In Chapter 5, the results from this study are discussed along with the implications of those results and the conclusions and recommendations of this researcher. Also addressed are the barriers that middle school teachers experience while integrating computer technology in their classrooms and strategies to help integrate technology.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

This research study was designed to examine the barriers to integrating computer technology in middle school curriculum and to formulate possible strategies for removing such barriers. The two questions that guided this research and provided direction for the development of the survey instrument used in this study were:

1. What barriers do teachers face when integrating computer technology into middle school curriculum?
2. What are possible solutions and strategies to effectively integrate computer technology into middle school curriculum?

The focus of this research emanated from a desire to determine teachers' interest in integrating computer technology into the middle school curriculum.

The researcher delivered 397 survey instruments to 10 middle schools within Mahoning and Trumbull Counties. According to the data received, time spent at in-service and university classes were all conducive to this study. After the surveys were returned, it was determined that 171 (43%) middle school teachers completed the surveys.

Recent Literature

Becker (1999) noted that during a 10-year span more than 50% of teachers received less than 5 hours of technological professional development and that the training was insufficient to make a real difference when integrating computer technology into middle school curriculum. Data from this research study added new evidence relative to the amount of training teachers received. Participants involved in this study revealed that they participated in various technological in-services at a variety of different hours. Data revealed that participants enjoyed integrating computer technology in their classrooms and, if given the opportunity, would continue to attend technology in-services that were designed to better utilize computer technology in the middle school curriculum. This researcher concluded that in-service programs attended by the survey participants did provide adequate training in the integration of computer technology across the middle school curriculum.

Orrill (2001) indicated during a study that included long term vs. short-term technology training that teachers who attended university classes that lasted 9–15 weeks obtained the skills they needed to integrate technology into middle school curriculum. This research study corroborated the literature as participants agreed that classes at a university/college successfully trained them to integrate technology throughout the main curriculum. Participants in this study found integrating technology into middle school curriculum to be enjoyable and stimulating.

However, fear of change and teachers' apprehensions and distress regarding use of computer technology are valid issues that should be addressed according to a review of current literature (Bitner & Bitner, 2002). According to current research, teachers need to

overcome fears, concerns, and anxieties in order to successfully utilize computer technology across middle school curriculum (Bitner & Bitner, 2002). Participants in this research study didn't list apprehension as an important reason for not integrating computer technology into their curriculum. Participants were eager to embrace computer technology, but other factors (i.e., time, lack of training, cost, equipment issues) emerged that prevented them from successfully integrating computer technology into middle school curriculum.

According to Bitner and Bitner (2002), administrator support of teachers is crucial for computer technology to be effectively integrated in the classroom. Data retrieved from this study supported this claim. Participants look to their administrators to provide continuing technology in-service, enabling them to become confident and successful in the classroom. Data collected from this study also provided evidence that participants support continuing in-service programs regarding computer technology.

Barriers to Integrating Computer Technology

Examination of the data revealed five barriers to the successful integration of computer technology into the classroom. These barriers were ranked according to the largest response to the least number of responses:

1. Technology Equipment
2. Training
3. Time
4. Students
5. Cost

The barriers affected each of the participants in various ways.

Technology Equipment

Technology equipment ranked number one as a barrier in integrating computer technology into middle school curriculum. Without equipment that operates properly, participants are unable to utilize knowledge acquired at technology in-services and college/university classes. According to Marx (2005), millions of dollars are spent to upgrade technology in schools. This research study revealed the opposite to be true relevant to funds being spent on computer technology equipment in individual classrooms and school computer technology labs. The data revealed (a) a lack of computer technology equipment, (b) damaged or outdated computer equipment, and (c) software issues were the main barriers to integrating computer technology into middle school curriculum.

This study found that boards of education, superintendents, and administrators of middle schools must communicate with technology coordinators and visit technology computer labs to assess computer technology equipment. School leaders must find ways to reallocate funds in the school budget to meet computer technology needs. This conclusion suggests a requirement for a needs assessment of computer technology and use. Providing updated software, additional computer equipment and software, and additional computer technology personnel would enable participants to integrate technology into the middle school curriculum.

Training

Training ranked second as a barrier to integrating computer technology. Data identified that the lack of training was detrimental to participants integrating computer technology into middle school curriculum. This research discovered that participants would engage in additional computer technology training if the opportunity was presented. This conclusion supported data reflected in the literature indicating that long-term technology in-services benefit teachers. It is recommended that participants enroll in a long-term computer technology in-service or university/college class. Active participants become active learners. This training will provide learners with active teaching techniques (e.g., discussion, questions, role-playing, small group interaction, problem solving, self-directed learning) that will enhance their instructional practice (Perera, 2008). Participants enrolled in computer technology training programs are encouraged to share ideas with their colleagues and to utilize the knowledge acquired during their training in the classroom.

Time

Time ranked in third as a barrier to the participants integrating computer technology in middle school. As existing research indicated, long-term in-services and university/college classes are important factors that allow teachers time to learn how to integrate computer technology into middle school curriculum (Olafson, Quinn, & Hall, 2005). Data in this research study identified *a lack of time* as a barrier to integrating computer technology. Participants employed full-time as educators and engaged in extra curricular activities (e.g., athletic coaches, academic coaches), value their time outside

their employment. It is recommended that administrators schedule common planning times that allow participants to network with staff members during the workday.

Continuous technology computer in-services on a weekly or monthly basis is highly recommended, as participants would not have to give up time outside their immediate workday.

Data from this research study revealed that time affected the integration of computer technology in the classroom. Educators integrating computer technology in middle school curriculum is contingent upon the amount of time educators have to prepare and teach their lessons. Literature reflects that educators must spend time planning and creating curriculum activities that allow for the integration of computer technology within their classrooms. Time is a critical factor in establishing whether computer technology will be used to integrate technology into the curriculum. It is recommended that administrators allow teachers planning periods to work in the computer lab classroom, thus allowing them the necessary time to work with other staff members and the technology coordinator to learn how to integrate computer technology in the middle school curriculum.

Students

Students ranked fourth as a barrier to integrating computer technology. Students should be a primary concern for educators. Current literature regarding the integration of computer technology into middle school curriculum did not identify students as a barrier. Data from this study revealed that participants were concerned that every student had computer technology in his or her home, which would allow them to complete

assignments as directed. Participants were also concerned that students did not have the necessary knowledge, which would allow them to complete assignments involving the use of technology equipment.

It is recommended that a framework for the inclusion of computer technology classes in schools be instituted. Coursework involving the use of computer technology should begin at the pre-school level. Schools should examine the resources made available by the National Center for Technology in Education (NCTE). This organization has initiatives for a comprehensive training program for teachers and students. A technology curriculum needs to be in place for students to acquire knowledge that will enable them to properly use computer technology.

For the students who do not have computer technology in his or her home, administrators need to compile for the students and their families, a list of computer labs or media centers that are available and open to the public. This list could include the names and locations of local libraries, universities, and media centers in the primary, middle schools, and high schools.

Cost

Cost ranked fifth as a barrier to middle school teachers integrating computer technology. Existing literature supports data found in this study regarding cost as a barrier. One primary obstacle in incorporating computer technology in middle school curriculum is the cost factor. Data from this study revealed that the cost of in-services and university/college classes was a barrier that prevented participants from enrolling in computer technology classes. It is recommended that administrators provide long-term

computer technology in-services to their staff during the course of a school year. These in-services should contain an evaluation tool to allow administrators to gauge the effectiveness of the in-service and to determine if the school monies were well spent. Current literature shows that educators who participate in long-term in-services and university/college classes are prepared to meet the demands of integrating computer technology in the middle school curriculum.

Possible Solutions and Strategies

Creating innovative learning environments that incorporate computer technology across the core curriculum require knowledge, time, and support for faculty. Research indicates that training and support from staff and administrators play a crucial role in the integration of computer technology in middle school grades. The five factors derived from this study that offer solutions and strategies are (a) in-services, (b) technology support staff, (c) staff meetings, (d) common planning periods, and (e) technology equipment. These five factors will offer teachers the chance to make the necessary shift in their thinking and in practice to help them successfully integrate computer technology across the core curriculum.

In-Services

According to the research data, in-services provided to educators influenced participants in a positive way when considering integrating computer technology into middle school curriculum (Compeau, Higgens, & Huff, 1999). It is the conclusion of this researcher that there is a viable need for administrators to offer continuous, long-term in-

services to their staff. Educators attending computer technology in-service programs would feel competent utilizing the knowledge acquired from such training in their classroom. As computer technology swiftly changes, continuing education in-services would allow educators to focus and reflect on their use of computer technology in their classrooms. Such training would enable teachers to successfully assess and assimilate emerging technology into their classrooms and allow full integration of computer technology into the middle school curriculum.

Technology Support Staff

Research indicates that long-term in-services and college university classes are vital to integrating middle school curriculum with computer technology. Once an educator obtains information regarding the integration of computer technology in the middle school curriculum, reinforcement must be provided with technical support.

Technology coordinators provide the support and mentoring to sufficiently sustain educators as they integrate computer technology in middle school curriculum.

Universities and colleges provide classes that allow educators to major in the educational field. A technology coordinator with knowledge regarding computer technology must be available to provide teachers with the necessary support and guidance to integrate computer technology into middle school curriculum.

Computer Technology Equipment

Data regarding computer technology equipment, repeats itself throughout the study. Research literature and this researcher agree that computer technology equipment

must operate properly and be updated to include state of the art software and new models of computer technology (Kotrlik & Redmann, 2005). Classrooms need to be equipped with computer technology equipment that is operational when utilized. Technology equipment must be maintained throughout the school year. Computer technology equipment that operates effectively and efficiently allows teachers the flexibility to integrate computer technology in the middle school curriculum.

Staff Meetings

Existing literature regarding the integration of computer technology into middle school curriculum did not make specific reference to staff meetings as a possible solution. Data analyzed from this study revealed the value of staff meetings that allow educators to network regarding computer technology. While long-term in-services and university/college classes are vital to the success of integrating middle school curriculum, teachers should continue to receive support provided through monthly staff meetings. It is the recommendation of this researcher that administrators model, support, and promote the use of computer technology at staff meetings. Professionals in the computer technology field should be invited to speak to educators for additional support. Educators should continue to search for a variety of ways to instruct their students in order to meet individual student needs. Support provided during staff meetings would aid educators as they attempt to increase their knowledge of educational technology

Common Planning Periods

Data examined in this study revealed that participants enjoyed having common

planning periods to network with staff members. When teachers work together, it allows time to learn how students are performing in each of the subject areas. This practice also allows for discussion among teachers to arrange additional tutoring where it is needed. Smitt (2006) tells us that this is the time where the integration of computer technology in the curriculum would be discussed as well.

It is recommended that administrators provide a common planning time for teachers within their subject areas and grade levels. This common planning time would allow teachers to meet and plan for the integration of computer technology into the middle school curriculum. Throughout the study, the data revealed that participants felt that the students enjoyed using computer technology in their classes. According to Smitt (2006), when schools coordinate a common planning time, teachers are able to target areas of academic achievement and learn additional skills that add to the curriculum regarding integrating computer technology in middle schools.

Conclusions and Recommendations

The conclusions and recommendations of this study were based on the results of data analysis. The two research questions, “What barriers do teachers face when integrating computer technology into middle school curriculum?” and, “What are possible solutions and strategies to effectively integrate computer technology into middle school curriculum?” promulgated the development of the research survey which ultimately yielded the data which was analyzed and interpreted into summary conclusions and recommendations.

Examination of the data from this study discovered five barriers that participants faced when integrating computer technology into middle school curriculum. These barriers are (a) technology equipment, (b) lack of training, (c) lack of time regarding attendance at in-services and university/college classes, (d) students, and (e) cost.

Conclusions

Conclusions drawn from the data analysis data revealed that computer technology equipment must be available in each classroom, must function properly, and must be updated throughout the school year allowing teachers to integrate computer technology into middle school curriculum.

In-services should be available to teachers during their regular work schedule that would support the integration of computer technology in middle school curriculum. Additional conclusions drawn from the research data revealed that participants need time available to them during the course of their school day to participate and network with other staff members

Recommendations

Recommendations regarding students reflect that participants considered students as an important factor when they contemplated the use of computer technology across middle school curriculum. By the time students reach middle school, they should have acquired enough knowledge in previous grades regarding the use of computers in order for teachers to implement their use. Students need to develop the skills necessary to

further their education and to make them more marketable as they leave schools and enter the job market.

Students need to learn how to search the Internet and to become familiar with the interconnections between education and technology. It is important that students understand (a) how the Internet works, (b) how the Internet can be used to maintain their own interests, and (c) how to use the Internet to help them with what they are studying in class. Bafile (2002) tells us that the Web is a real life environment that can help students make what they are learning more relevant since they will be communicating it to a wider environment and watching how other people interact with what they create. This conclusion is based only on the data from this survey since the researcher could not locate existing research on the importance of students as a barrier.

Examination of the cost factor showed that participants were reluctant to attend computer technology university/college classes, as the cost was too invasive on family budgets. On the other hand, suggestions were made by participants to have computer technology in-services held during the course of a school day. This option is strongly recommended as a way to encourage teachers to integrate computer technology into the middle school curriculum.

Possible solutions to integrating computer technology into the middle school curriculum include (a) conducting in-services, (b) holding technology-specific staff meetings, (c) increasing the number technology support staff, (d) adding common planning periods, and (e) updating technology equipment. Long-term, computer technology training classes should be implemented during the school day or placed on the agenda of a staff meeting to help teacher integrate computer technology into the middle

school curriculum. Research reveals that long-term, computer technology in-services better serve teachers than a one or two-day in-service. With technology becoming more prevalent in school for everyday use, funds need to be allocated to areas of professional development to provide in-services to staff regarding computer technology training.

A computer coordinator should be added to the school support staff. This recommendation is supported by (a) literature that cites the importance of computer personnel in a school building and (b) the data from this study that indicated that participants would find a computer technology expert in their building useful and beneficial.

When computer technology problems occur in the classroom, it is not possible to assume that teachers can ignore their students and solely concentrate on restoring failed computer technology. It is recommended that telephones be placed in each of the classrooms along with a number to call to guide teachers in finding answers to technical problems. Students themselves are often overlooked as a valuable resource. Involving students by asking for their assistance would foster self-esteem, confidence, and help to provide a greater interest in the learning process.

Securing grants from organizations such as the Bill Gates Foundation or other businesses that provide monies for schools would help ease the cost of a computer technology expert. To further help reduce the cost of hiring new teachers, this researcher recommends using an interdisciplinary delivery of instruction in the classroom. For example, the social studies teacher and the computer teacher could work together to combine computer integration across the curriculum.

Common planning times at schools provide teachers with the opportunity to network with other teachers and to maintain their interest in computer technology. It is a crucial element in the successful integration of computer technology into the middle school curriculum. Planning time helps improve instruction by allowing teachers to (a) share a variety of teaching methods, (b) look at students' work, and (c) plan curriculum and lessons together. Common planning times can contribute to the integration of computer technology across the curriculum if sufficient time is built into the school day schedule instead of carving out time before or after the school day. It is recommended that common planning times be used on a regular and consistent basis to help teachers modernize their teaching methods regarding computer technology across the curriculum.

Administrators, computer coordinators, and superintendents need to thoroughly assess the technology in their schools. Proper equipment and software must be available to successfully integrate computer technology into the middle school curriculum. Budgets need to be creatively addressed in order to find available funds to purchase new computer equipment and software.

The integration of computer technology throughout the curriculum must be viewed as an effective methodology to learning. To this end, future teaching candidates with previous computer technology experience must be viewed as an asset to the school system. Candidates of all ages and of both genders should be considered for teaching positions if they have the background and training. The data from this research does not support the perception that younger teachers are more willing to use computer technology in their instruction. Instead, it showed that survey participants were open to the idea that computer technology could significantly enhance curriculum.

These recommendations are not the only solutions to integrating computer technology. This researcher determined that if a large number of teachers age 50 and older are hired other sets of problems might arise. The discipline styles of teachers in this age group could be too strict with their discipline. Health issues for older teachers are a factor that should be considered for men and women in this age group. This age group also has been known to become caregivers of aging parents, thus causing additional stress in their lives. However, if administrators decide to hire younger teachers, other factors such as the lack of classroom management skills and discipline problems could come into play. During the hiring process, administrators must keep in mind the age discrimination factor when the age of an applicant becomes a determining factor.

There was insufficient evidence from this study to reveal that participants from either county utilized computer technology more hours per week than the other. It is recommended that both counties prepare themselves fiscally and financially to designate funds for the use of computer technology to integrate technology within the curriculum.

To this end, administrators must know and understand the technology standards that exist at the local, state, and national levels. As leaders, it is their responsibility to work with teachers to develop the vision and goals to implement the use of computer technology, while at the same time putting in place the technology standards.

There is a need for administrators to develop guidelines in their individual school as to what to look for regarding classroom environment and computer technology. It is recommended that computer technology be accessible to both students and teachers. Computer technology equipment should not sit in the corner of the classroom. It should

be placed in an area where it can be utilized without disturbing others who might be working on different projects.

One responsibility of an administrator is to evaluate teachers. The administrator needs to be aware of the use of computer technology while observing interactions in the classroom. Are the students and teachers comfortable around technology? Are they able to utilize computer technology as a learning tool? Is computer technology being used as it is needed or just at specific times? How is computer technology being used? It is being used only for typing documents or is it being used across the curriculum to integrate the core subjects?

Administrators must be able to observe and accurately assess the use of computer technology in their schools. Eib (2001) tells us that observing and evaluating technology use in a classroom is most effective (a) when it is based on the vision and goals of school improvement plans that include technology and (b) when it is done in partnership with the teachers.

It is further recommended that superintendents, administrators, and boards of educators develop a strategic plan that encompasses both the goals and visions of a computer technology plan and addresses the barriers identified in this study. This strategic plan would (a) facilitate student learning, (b) facilitate staff and teacher learning, (c) encourage and enhance communication among the community and school members, (d) state the vision and goals statements, and (e) have in place an evaluation of the computer technology plan.

The barriers of cost, students, time, and computer technology equipment could also be addressed through the formation of a technology committee. Members of this

committee would consist of students, teachers, administrators, parents, and business people from the community who are proficient with computer technology.

Within the committee, members could form subgroups and delegate responsibilities. These subcommittees would:

1. Facilitate student learning utilizing computer technology.
2. Facilitate staff and teacher learning utilizing compute technology.
3. Increase communication among community and school members.
4. Design a vision and goal statement.
5. Research new computer technology (e.g., equipment, software).
6. Design and implement an evaluation of the computer technology plan.

To facilitate student learning, students and teachers would operate within this subgroup. The responsibility of this subcommittee would be to personalize and extend student learning through computer technology that broadens and differentiates student-learning opportunities and supports students as they manage and guide their own learning. This type of facilitation would engage students in personalized, collaborative, and interactive learning experiences.

A subcommittee comprised of administrators, teachers, and parents would deal with facilitating staff and teacher learning. These members could look at the needs of the administrator to enhance teacher participation. Do administrators support the implementation and change regarding integrating computer technology into the curriculum? Effective administrators use their skills in the creation of new learning environments. It is important that administrators be proactive in creating support for their teachers. Second, is there support for professional learning? In-services will be planned

for the realization of professional learning that plays a part to improve teacher quality within the integration of computer technology in curriculum, pedagogy, and assessment. In-services will provide professional learning that helps teachers to be confident in their use of computer technology.

Community members, parents, teachers, and administrators could work together to increase communication among school and community members. Building community support for schools through effective communication and community participation would build trust and lead to a general understanding of the educational needs of the school district. Involving the community leads to collaboration with community members and the school.

The subcommittee charged with designing the goals and vision statement of the committee should include one teacher, one administrator, one student, one parent, and one community member. This subgroup needs to develop and articulate the goals and vision statement of the computer technology plan. The vision statement must be succinct and no longer than a few sentences. The goals should define how teachers are going to integrate computer technology into the curriculum. The goals support the vision statement and should balance and not conflict with the vision statement.

The subcommittee charged with researching computer equipment and software should consist of teachers, parents, and business people from the community. This subgroup would research the different computer equipment and software available to educators and make recommendations to the computer technology committee.

Administrators, teachers, and parents should be involved with the evaluation of the computer technology plan. This subgroup would appraise and evaluate the effectiveness of the plan. Possible review questions are:

1. Were in-services successful in training teachers in the use of technology in integrating computer technology into the curriculum?
2. Did students utilize computer technology in a collaborative and interactive manner with their schoolwork?
3. To what extent were the goals met?
4. Is support from administrators in place?
5. Are there any significant problems or issues that need to be addressed for future reference?

Results from the evaluation should be documented and shared with the computer technology committee. An evaluation should be completed each year.

Within the strategic plan, a committee would address the barrier, cost. This committee, consisting of administrator, parents, and community members would write grants to secure monies to purchase new computer technology and update software programs. A wealth of information on funding sources can be found by using popular Internet search engines and key words such as grants, technology, computer, and schools. Listed below is a partial list of web addresses pertaining to grants:

1. **Funding for technology:**
<http://www.mcrel.org/products/tech/technology/funding.asp>
2. **U.S. Department of Education—Technology Grant Programs:**
<http://www.ed.gov/Technology/edgrants.html>

3. **U.S. Department of Education Office of Educational Technology.** This website includes information on funding and the "E-Rate" (i.e., telecommunications discounts for schools and libraries).
<http://www.ed.gov/Technology>
4. **U.S. Department of Education Technology Innovation Challenge Grants:** <http://www.ed.gov/Technology/challenge/>
5. **TOP: Technology Opportunities Program.** This is a highly-competitive, merit-based grant program that brings the benefits of digital network technologies to communities throughout the United States. TOP is a Department of Commerce program.
<http://www.ntia.doc.gov/otiahome/top/index.html>

Timelines must be put in place to determine when to implement the computer technology plan. Meeting dates need to be set for subcommittees to meet on a monthly basis as well as when the subgroups would meet to report back to the whole computer technology committee. The chair of the computer program committee would share the reports of the subcommittees with the board of education and the school superintendent.

Along with the computer technology committee, parents and business people from the community could share their expertise, time, and computer skills with teachers and students during the school day. For example, instead of scheduling student study halls in the library or cafeteria, use the computer lab. Students who sit on the technology committee could then be scheduled in the computer lab to offer support to both teachers and students who need additional training on the computer. This would also be an excellent time to bring in parents and/or people from neighboring businesses to speak to

students and available teachers. These ideas could be implemented without any additional costs to the school system and it would benefit the students and teachers while providing an excellent opportunity for community interaction. Students, who prefer to use their study hall to complete homework assignments, would be monitored in the library to allow them quiet time.

In addition, evening computer technology classes could be offered to the local community. Students, parents, and teachers could facilitate the classes. This would also invite the community inside the schools and provide a positive experience for local residents.

We must share our visions, goals, and talents to successfully integrate computer technology in the schools. How can teachers integrate computer technology across the curriculum? What does computer technology look like in the classroom? What would one see gazing into a classroom where computer technology is being successfully utilized? There are a variety of software programs available (e.g., Word, PowerPoint, Excel, Microsoft Picture Manager, Visual Manipulative, Classroom Performance Systems (CPS), SmartBoard, Smart Notebooks, E-mail, Grade Pro, Certificate Makers) that can be used. On the Internet, new and current technology includes blogging, Wiki, and MySpace.

The integration of computer technology across the curriculum can include such things as students' blogging their reports on-line or second graders using computers to type a holiday poem for their parents. Literature and other texts available on the Internet can be used as supplemental textbooks when studying general topics or something as specific as a foreign language. The possibilities are endless, providing teachers are aware

of the variety of options that exist. This is where the strategic plan and its committee members are so virtually important to the integration of computer technology into middle school curriculum.

Children today are growing up with computers in their homes. As soon as they are able to reach the keyboard they are involved with computer technology. Whether it be playing games, searching the Internet, or “talking” to a friend, computer technology plays a large part in their young lives. As educators we need to continue to bring this learning tool, computer technology, into our schools. We need to share the excitement that the students have regarding computer technology and incorporate this tool into our curriculum.

Future Research

The purpose of this study was to identify barriers in integrating computer technology in middle school curriculum and to formulate possible strategies to help educators overcome identified barriers for the benefit of students and the educational program. After examination of the data, both barriers and solutions were addressed. Future research is recommended (a) to identify the need for administrators to recognize when teachers are hesitant to utilize computer technology in their classrooms and (b) to look closer at personnel needs regarding the integration of computer technology into middle school curriculum:

1. Further study is needed to investigate if entry-level and veteran teachers are successfully integrating computer technology into middle school curriculum.

2. Further study is needed to examine the amount of time or hours the entry-level teacher and the veteran teacher have received from their university/college classes regarding the integration of technology into middle school curriculum. Are entry-level teachers receiving additional training regarding computer technology that a veteran teacher would not have received, thus allowing entry-year teachers the knowledge and ease to sufficiently integrate computer technology into the middle school curriculum?
3. Future studies are needed discover the comfort level of teachers utilizing computer technology in the classroom. Compeau, Higgins, and Huff (1999) conducted a longitudinal study that tested the influence of computer self-efficacy beliefs, outcome expectations, affect, and anxiety on computer use.

This study was designed to identify barriers and provide solutions to teachers trying to integrate computer technology into middle school curriculum. Hopefully, this research will encourage educators to reflect on the current status of integrating technology into middle school curriculum and motivate them to take the necessary steps to remedy the barriers identified in this study.

REFERENCES

- Albion, P. R. (1999). Self-efficacy beliefs as an indicator of teachers' preparedness for teaching with technology. Retrieved August 1, 2007, from <http://www.usq.edu.au/users/albion/papers/site99/1345.html>
- Atkins, N. E. (1997). *Using teacher stages of concern and an assessment of middle school teachers' use of technology in the classroom. A model for technology staff development*. Unpublished doctoral dissertation, North Carolina State University, Raleigh.
- Algozzine, R., Antonak, R. F., Bateman, L. R., Jr. (1999). A process for developing technology competencies in a college of education. *Contemporary Education, 70*(4), 26–31.
- Bafle, C. (2000). *Establish a computer club: Big benefits for students and staff*. Retrieved January 12, 2009, from http://education-world.com/a_tech/tech/035.shtml
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: Freeman
- Basham, J., Palla, A., & Pianfetti, E. (2005). An integrated framework used to increase preservice teacher NETS-T ability. *Journal of Technology and Teachers Education, 13*(2), 257–276.
- Bassett, P. T. (2004). When technology works for schools. *Independent Schools, 63*(4), 7–9.
- Becker, H. J. (2000). Access to classroom computers. *Communications of the ACM, 43*(6), 24–25.
- Beckmann, C. E., Thompson, D. R., & Senk, S. L. (1999). Assessing student's

understanding of functions in a graphing calculator environment. *School Science and Mathematics*, 99(8), 451–456.

Bennett, C. K., & Daniel, L. H. (1999, February). *Preparing novice teachers to use technology: Do they practice what we teach?* Paper presented at the SITE 1999 conference, San Antonio, TX.

Benson, D. (1997). Technology training: Meeting teacher's changing needs. *Principal*, 6(3), 17–19.

Beyerback, B., Walsh, C., & Vannatta, R. A. (2001). Computer technology as controller or enhancer of pedagogy: The pedagogy stands alone. *Journal of Technology in Teacher Education*, 9(1), 105–127.

Bitner, N., & Bitner, J. (2002). Integrating technology into the classroom: Eight keys to success. *Journal of Technology and Teacher Education*, 10(1), 95–100.

Burkholder, J. (1995). *An annotated bibliography of the literature dealing with teacher training in the uses of the computer in education*. East Lansing, MI: National Center for Research on Teacher Learning. (ERIC Document Reproduction Service No. ED260696)

Burns, M. (2002). From black and white to color: Technology, professional development, and changing practice. *T.H.E. Journal*, 29(11), 36–42.

Butler, J., & Watrous, M. (2005). Retention of gifted preservice teachers. *Techniques ACTE*, 80(3), 47–51.

Christensen, R. (2002). Effects of technology education on the attitudes of teachers and students. *Journal of Technology in Education*, 34(4), 411–433.

Collier, S., Rivera, M., & Weinburgh, M. (2004). Infusing technology skills into a teacher

education program: Change in students' knowledge about and use of technology. *Journal of Technology and Teacher Education*, 12(3), 447–468.

Compeau, D., Higgins, C. A., and Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS Quarterly*, 23(2), 145–148.

Copeland, N. L. (2004). The impact of technology-based professional development, environmental support, teacher background characteristics, and computer attitudes on technology integration in K-12 education (Doctoral dissertation, Wayne State University, 2004). AAT 3202048.

Cuban, L. (1986). *Teacher and machines: The classroom use of technology since 1920*. New York: Teacher College Press.

Dede, C. (1998). Evaluating the effectiveness technology initiatives. *High School Magazine*, 6(1), 16–20.

Dockstader, J. (1999). Teachers of the 21st century know the what, why, and how of technology integration. *Technology Horizon in Education Journal*, 26(6), 73–74.

Guerrero, S., Walker, N., Dugdale, S., (2004). *Journal of computers in Mathematics and Science Teaching*, 23(1), 5–20.

Dyer, C. D., Ringstaff, C., & Sandholtz, J. H. (1991). Changes in teachers' beliefs and practices in technology-rich classrooms. *Educational Leadership*, 48(8), 45–48.

Eib, B. J. (2001, May/June). Evaluating technology use in the classroom. *Principal Leadership*, 16–23.

Emeagwali, N. S. (2004) School Technology: Still a primary concern for states, but

challenges remain. *Techniques*, 9(1), 16.

Ertmer, P. A. (1999). Addressing first-and second-order barriers to change: Strategies for technology integration. *Education Technology Research and Development*, 47(4), 47–61.

Fullan, M. G. (1993). *Changes forces*. New York: Flamer Press.

Fuller, H. L. (2000). First teacher their teachers: Technology support and computer use in academic subjects. *Journal of Research on Computing in Education*, 32(4), 511–537.

George, P. (2000). Breaking ranks. *Principal Leadership*, 1(4), 56–61.

Giles, F. (2003). Teacher professional development and their concerns about using computers: Do they match? (Publication No. AAT3133861). Indiana University, Department of Instructional Systems Technology.

Gningue, S. (2003). The effectiveness of long term vs. short term training in selected computing technologies on middle and high school mathematic teachers' attitudes and beliefs. *Journal of Computers in Mathematics and Science Teaching*, 22(3), 207–224.

Guerrero, S., Walker, N., & Dugdale, S. (2004). Technology in support of middle grade mathematics: What have we learned? *Journal of Computers in Mathematics and Science Teaching*, 3(1), 5–20.

Hall, G. E., & Hord, S. M. (2001). *Implementing change: Patterns, principles, and potholes*. Boston: Allyn & Bacon.

Handler, M. G., & Strudler, N. (1997). The ISTE foundation standards: Issues of implementation. *Journal of Computing in Teacher Education*, 13(2), 16–23.

- Hawkes, M., & Cambre, M. (2001). Educational technology: Identifying the effects. *Principal Leadership (High School Edition)*, 1(9), 48–51.
- Hignite, M. A., & Echternacht, L. J. (1002). Assessment of the relationships between the computer attitudes and computer literacy levels of prospective educators. *Journal of Research on Computers in Education*, 24(1), 381–389.
- Honey, M., & Moeller, B. (1990, August). Teachers' beliefs and technology integration: Different values, different understandings. *Center for Technology in Education CTEO Technical Report*, 6, 261–315.
- Horsley, D., Loucks-Horsley, S. (1998). CBAM brings order to the tornado of change. *Journal of Staff Development*, 19(4), 417–425.
- Kotrlik, J., & Redmann, D. (2005). Extent of technology integration in instruction by adult basis education teachers. *Adult Education Quarterly*, 55(3), 200–219.
- Lewis., V. K., Shaha, F. H., Farnsworth, B. J., Benson, L. F., & Bahr, D. L. (2003). The use of assessment in improving technology based instruction programs. *Journal Instructional Psychology*, 30(2), 110–119.
- Lowther, D., Ross, S., & Morrison, G. (2003). When each one has one: The influences on teaching strategies and student achievement of using laptops in the classroom. *Educational Technology Research and Development*, 51(3), 23–44.
- March, T. (2000). Are we there yet? A parable on the educational effectiveness of technology. *Multimedia Schools*, 7(3), 54–44.
- March, T. (1999). The 10 stages of working the web for education. *Multimedia Schools*, 6(3), 54–55.
- Marx, S. (2005). Improving faculty use of technology in a small campus community.

Technology Horizons in Education Journal, 32(6), 21–23.

Meyers B., & Collie, S. (2003). Creating on-line individual education plans: Pre-service teachers learn to make data-based decisions. *Action Teach Education*, 25(2), 23–25.

McNierney, D. (2004). Case study: one teacher's odyssey through resistance and fear. *Techtrends*, 48(5), 64–69.

Moran, M. M. (2006). Teacher Perceptions of the Effectiveness of their instructional practice in the digital classroom. Doctoral dissertation, University of Hartford, 2006. (UMI No. 3206070).

Moursund, D., & Bielefeldt, T. (1999). Will new teachers be prepared to teach in a digital age? A national survey on information technology in teacher education. Santa Monica, CA: Milken Exchange on Education Technology and the International Society for Technology in Education.

Murphy, K., Richards, J., Lewis, C., & Carman, E. (2005). Strengthening educational technology in K-8 urban schools and in pre-service teacher education: A practitioner-faculty collaborative process. *Journal of Technology and Teacher Education*, 13(1), 125–139.

National Council for Accreditation of Teacher Education (2002). Professional standards or the accreditation of schools, colleges, and Departments of Education. Washington, DC. Retrieved June 3, 2007, from http://www.ncate.org/2002/unit/stnds_2002.

Norman, D. (1991). *Things that make us smart: Defending human attributes in the age of the machine*. Reading, MA: Addison-Wesley.

- O'Bannon, B., & Judge, S. (2004). Implementing partnerships across the curriculum with technology. *Journal of Research on Technology in Education*, 37(2), 197–216.
- Olafson, L., Quinn, L. F., & Hall, G. E. (2005). Accumulating gains and diminishing risks during the implementation of best practices in a teacher education course. *Teach Education Quarterly*, 32(3), 93–106.
- Oliver, T. A., & Shapiro, F. (1993). Self-efficacy and computers. *Journal of Computer-Based Instruction*, 20, 81–85.
- Orrill, C. H. (2001). Building technology-based, learner-centered classrooms: The evolution of a professional development framework. *Education Technology Research and Development*, 49(1), 15–34.
- Otero, V., Peressini, D., Meymaris, K., Ford, P., Gavin, T., Harlow, D., et al. (2005). Integrating technology into teacher education: A critical framework for implementing reform. *Journal of Teacher Education*, 56(1), 8–23.
- Painter, D. D. (2000). Teacher as researcher a means to assess the effectiveness of technology in the classroom. *Learning and Leading with Technology*, 27(7), 10–13.
- Porter, B. (1999). Data lends schools a helping hand. *Technology Horizons in Education Journal*, 26(9), 28–31.
- Reehm, S. P., & Long, S. A. (2000, June). *Beyond computer literacy: Addressing the evolution of technology standards*. Paper presented at the SITE conference, San Diego, CA.
- Ringstaff, C., & Kelley, L. (2002). *The learning return on our education technology investment: A review of findings from research*. San Francisco: Jossey-Bass.

- Sanders, B., Brown, C., & Zellner, L. (2002). Piloting, polishing & perfecting: Creating and implementing a technology staff development model. *Technology Horizons in Education Journal*, 30(2),44–47.
- Schrum, L. (1999). Technology professional development for teachers. *Education Technology Research and Development*, 47(4), 83–90.
- Sheffield, C. J. (1996). A trend analysis of computer literacy skills of pre-service teachers during six academic years. *Journal of Technology and Teacher Education*, 6(23), 105–112.
- Sheingold, K. (1001). Restructuring for learning with technology: The potential for Synergy. *Phi Delta Kappan*, 73(1), 17–21.
- Sheingold, K., & Hadley, M. (1990). *Accomplished teachers: Integrating computers into classroom practice*. New York: Center for Technology6 in Education, Bank Street, College of Education.
- Silverstein, G., Frechtling, J., & Miyoaka, A. (2000, Month). *Evaluation of the use of technology in Illinois public schools: Final report (prepared for Research Divisions, Illinois State Board of Education)*. Rockville, MD: Westat.
- Sugar, W. (2002). Applying human-centered design to technology integration: Three alternative technology perspectives. *Journal of Computing in Teacher Education*, 19(1), 12–17.
- Sugar, W. A., & Warren, L. L. (2003). Promoting a teacher/leader-designer perspective for public school teachers. *Action Teach Education*, 25(3), 33–34.
- Thatcher, D. (1996). Wired classrooms. *Issues in Science and technology*, 12(3), 13–14.
- Topper, A. (2004). How are we doing? Using self-assessment to measure changing

- teacher technology literacy within a graduate educational technology program. *Technology and Teacher Education*, 12(3), 303–317.
- Trotter, A. (1992). Technology in classrooms: That's edutainment! *Education Digest*, 57(5), 3–5.
- U.S. Department of Education (1999). Preparing tomorrow's teacher to use technology. Retrieved June 8, 2007 from <http://www.ed.gov/teachtech/>
- Veltman, T. (2005). *Barriers to the effective use of technology in school classrooms*. Doctoral dissertation, Loyola University of Chicago, 2005. (UMI No. 3174269)
- Violato, C., Mariniz, A., & Hunter, W. (1989, Winter). A confirmatory analysis of a four-factor model of attitudes toward computers: A study of pre-service teachers. *Journal of Research on Computing in Education*, 22, 199–213.
- Wang, L., Ertmer, P. A., & Newby, T. J. (2004). Increasing pre-service teachers' self-efficacy beliefs for technology integration. *Journal of Research on Technology in Education*, 36(3), 231–250.
- Willis, J., & Cifuentes L. (2005). Training teachers to integrate technology into the curriculum: Online versus face-to-face course delivery. *Journal of Technology and Teacher Education*, 13(1), 43–63.
- Yamagata-Lynch, L. C. (2003). How a technology professional development program fits into teachers' work life. *Teaching and Teacher Education*, 19(6), 591–607.
- Zigarmi, P., Betz, L., & Jensen, D. (1977). Teachers' preferences in and perceptions of in-service education. *Educational Leadership*, 34(1), 545–551.

APPENDIX A

SURVEY INSTRUMENT

Survey of Middle School Teacher

For

A Dissertation Study

By

Lois J. Cavucci

AN ANALYSIS OF BARRIERS AND POSSIBLE SOLUTIONS IN INTEGRATING
COMPUTER TECHNOLOGY INTO MIDDLE SCHOOL CURRICULUM: FINDING
FROM A MIXED-METHOD APPROACH

Survey of Middle School Teachers

1. Age:
 21-30 31-40 41-50 51-60

2. Education:
 Bachelor's degree Master's degree Doctorate degree

3. Gender:
 Female Male

4. Grade level teaching:
 5th 6th 7th 8th

5. Total years teaching:
 1-10 11-20 21-30 31+

6. Number of years at present school:
 1-10 11-20 21-30 31+

7. How long have you utilized computers in your classroom:
 Never 1-5 years 6-10 11-15 years

8. What best describes the community in which your school district is located:
 Urban Suburban Rural Other _____

9. What major subjects do you teach: (Mark all that pertain)
 Language arts/reading Science Mathematics
 History/Geography

10. How many computers do you have in your classroom:
 A computer for the teacher only 1-4 5-10 11+

11. How often do you use a computer at school in your classroom:
 0 hours per week 1-4 hours per week
 5-10 hours per week More than 10 hours per week

12. How often do your students use the computer lab:
 0 hours per week 1-4 hours per week
 5-10 hours per week More than 10 hours per week

13. Have you ever received any type of computer technology training:
 No Yes

14. What type of computer technology training have you received:
 In-services/professional development
 Classes at a university/college
 Other _____

15. How many credit hours of in-services/professional development in regard to technology have you received:
 1-5 hours 6-10 hours 15-20 hours 21+ hours

16. How many hours of university/college classes in regard to technology have you received:
 1-5 hours 6-10 hours 15-20 hours 21+ hours

Please read each statement and then mark the column, which best shows how you feel.

SD = Strongly Disagree, D = Disagree, U = Undecided, SA = Strongly Agree, A = Agree

	<u>SD</u>	<u>D</u>	<u>U</u>	<u>SA</u>	<u>A</u>
18. I think that working with computers in the classroom would be enjoyable and stimulating	—	—	—	—	—
19. If given the opportunity I would like to learn how to use computers in the classroom	—	—	—	—	—
20. I do not use computers in my classroom as I have not received any training in that area	—	—	—	—	—
21. I feel that the instruction I have received from in-services has taught me to successfully integrate computer technology into the major subjects	—	—	—	—	—
22. I feel that classes at my university and technology in-services have trained me in the basics of integrating computer technology with the major subjects	—	—	—	—	—
23. I do not like to integrate computer technology with the major subjects because I am apprehensive about change that accompanies the integrations of computer technology.	—	—	—	—	—
24. The climate in my school building in regard to integrating computer technology with the major subjects is one that is warm and welcoming	—	—	—	—	—
25. Computer technology can be a useful instructional aid in almost all subject areas	—	—	—	—	—
26. I feel competent constructing and implementing project based learning lessons in which students use a range of computer technology	—	—	—	—	—

APPENDIX B

LETTER OF INTRODUCTION

Dear Teacher:

I am a Doctoral Student in Youngstown State University's Educational Leadership Program. Thank you for taking the time to fill out the enclosed survey. My study involves teachers and the encouragement and barriers teachers find while integrating computer technology into the major subjects, mathematics, science, language arts/reading and geography/history, using computer labs with laptops or desktop computers and allowing students access to computer technology to complete special projects or learn software applications to improve upon a project. I am also interested in the amount of time you spent at a university enrolled in technology classes or the amount of time spent at in-services regarding the same.

We have randomly chosen schools in two counties in the State of Ohio. Your anonymity is assured, as you are not providing any personal identification data.

We ask please, that you take a few minutes to fill out the enclosed survey and return it in the SASE as soon as possible. Again, we do not ask for your name to protect your privacy.

It will take you a minimum of 8-10 minutes to complete this study.

Thank you for your cooperation. Your cooperation will immensely help to complete my study. Your cooperation is highly valued and is essential to completing this study. Again, thank you!

Sincerely,

Lois J. Cavucci

enclosure

APPENDIX C

INFORMED CONSENT

Dear Sir or Madam:

I am conducting a study to determine whether professional developments and/or college/university courses are meeting the needs of classroom teachers in integrating computer technology in their classrooms, what encourages them, and what are the impediments they find in regard to integrating computer technology across the core curriculum. In this study you will be asked to complete a survey designed to identify number of credit hours received at a university or in-service and what encourages you or what impediment you will find while integrating computer technology. This survey will take about ten minutes of your time to complete.

There are no risks to you as all information will be handled in a strictly confidential manner, and no one will be able to identify your data the results will be reported in summary form.

Your participation in this study is totally voluntary and you may withdraw at any time without negative consequences. If you wish to withdraw at any time during the study, simply withhold returning the survey and/or inform me at 330-792-0774 or at ljc261@hotmail.com.

Please feel free to contact Lois J. Cavucci, at 330-792-0774 if you have any questions about the study. Or, for further questions, contact the Director of Grants and Sponsored Programs at YSU (330-941-2377).

I understand the study described above and have been given a copy of the description as outlined above. I am 18 years of age or older and I agree to participate.

Signature of Participant

Date

APPENDIX D

HUMAN SUBJECTS RESEARCH COMMITTEE PERMISSION



One University Plaza, Youngstown, Ohio 44555
School of Graduate Studies and Research
Office of the Dean
330.941.3091
Fax 330.941.1580
graduateschool@cc.yzu.edu

May 15, 2008

Dr. Gunapala Edirisooriya, Principal Investigator
Ms. Lois Cavucci, Co-investigator
Department of Educational Foundations, Research, Technology, & Leadership
UNIVERSITY

RE: HSRC Protocol Number: 118-2008
Title: Teacher Training for Integrating Computer Technology into Middle School Core
Curriculum: Evidence from a Mixed-Method Approach

Dear Dr. Edirisooriya and Ms. Cavucci:

The Human Subjects Research Committee has reviewed the abovementioned protocol and determined that it is exempt from full committee review based on a DHHS Category 2 exemption.

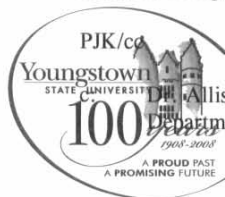
Any changes in your research activity should be promptly reported to the Human Subjects Research Committee and may not be initiated without HSRC approval except where necessary to eliminate hazard to human subjects. Any unanticipated problems involving risks to subjects should also be promptly reported to the Human Subjects Research Committee.

The HSRC would like to extend its best wishes to you in the conduct of this study.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter J. Kasvinsky".

Peter J. Kasvinsky
Associate Provost for Research
Research Compliance Officer



Allison Harmon, Interim Chair
Department of Educational Foundations, Research, Technology, and Leadership

APPENDIX E

PARTICIPANTS' REPLIES TO QUESTION 27

Question 27. What encourages you to integrate computer technology throughout the major subjects in your classroom (i.e., training, peer teaching)?

The History Alive Program, students love it!

Projects/multi-genre research.

Working computers.

Independent study (especially if students do not have access at home).

Training in areas such as homeroom.com.

Scantron sheets.

The children, they enjoy the computers.

In-services.

Reading counts.

Equipment that works.

History is alive.

Ease of integration.

My fellow students.

I enjoy spending time working alone on the computers, by learning new things, this encourages me to bring what I learned in the classroom.

When they bring people into the school to teach us.

With my training I feel competent to integrate computers in my classroom. (I am probably the most competent in my building.)

Feeling comfortable with technology.

Training, no doubt.

Computers that actually worked.

My students, they want to use the computers.

Knowledge and practice.

Knowledge of students on computer.

Training at a time we are not already overwhelmed with so many changes.

Programs and computers.

Inclusion.

New buildings and new staff.

Students enthusiasm encourage me to use technology in my classrooms.

New courses for language arts, reading, and English.

Practice sessions with trainers.

Working with the other teachers, they encourage and motivate me.

Use a smartboard that I use daily to provide instruction. I have been asked numerous times to provide training to other teachers because of this I need to be able to use the technology to the fullest.

Enhances student understanding.

Computers that do not freeze up.

Not enough computers.

Training where they take the time to really teach us.

Software and equipment.

Students encourage and ask to use the computers.

Training.

Personal experience.

Cooperative teaching.

Many helpful websites to use as supplemental information pertaining too different subject areas.

Training

When my peer teachers take classes with me.

Students in schools today are very familiar with computers and enjoy activities involving the computer.

A motivating tool for the students, they get excited about technology.

Technology, it can be used as a visual aide.

Personal training.

Training.

The students.

The other teachers I team teach with encourages me.

Research on my own way to integrate technology.

Equipment that was not old.

Access to technology, aka if the computers in the lab are running smoothly.

Additional training.

Research.

Word processing, it is a great way to accommodate visual and auditory learners.

Computer and new up-to-date educational software.

Mostly influenced by peer teachers and programs provided by the school system.

My students. Some students especially my gifted students, welcome computer integration.

Students, I feel students appreciate this tool for learning.

Time off to attend classes.

My students. I teach a multi-leveled group of learners.

I feel that adding technology into the lessons has reached each learner during the lessons.

Availability of technology; which is none for my classroom.

Students, they love when we use computers.

Properly working computers.

The students see this, technology, as the norm.

Fellow staff members.

When we are able to integrate, we are able to enter their world.

Training programs provided.

Equipment that works each time I need to use it.

When they bring in computer teachers to work with us.

The students are more motivated to work on a project if they are learning new ways to use the computer for that purpose. I also like to lecture using power points with streaming video.

Our text books as an on line book.

Training.

Software and computers.

N/A

Training.

Equipment.

Technology.

All of the kids today are computer savvy, they encourage me.

What encourages me are the other teachers.

Students enjoy something different and technology lets us expand on textbook lecture materials.

Equipment. I also was given a smartboard so I really am eager to incorporate technology in my class.

N/A

Seeing the enthusiasm and advanced abilities and skills of the students encourages me to use the most up-to-date technology.

My peers in my building.

Training.

In today's technology world I am encouraged because technology is a very good way to keep students interest and help prepare them for the future.

Training knowing what is available to us.

Computers that work efficiently.

Finding time in my day to actually work on and develop technology assignment.

Finding good activities that students will really enjoy and not play around without causing more work for myself.

New computers.

Staff members when we train together on computers.

Additional training on new computers, software, etc.

N/A

I use computer technology in my classroom as a creative tool.

Computers help my students to prepare writing and projects for presentation.

The computer is very helpful in teaching/guiding visual learners.

The computer as it help me teach my classes.

Training, I would implement more technology with more training.

My homeroom students.

Student interests, technology holds their attention.

Training.

Student involvement.

Training.

N/A

Student Interests.

Computers as students do enjoy using them.

Training.

Computers are the future needs of students.

Peer teaching, playing around with it due to my own needs.

Training.

Computers that are working.

Society.

Administration.

Encouragement from peers.

Working with other teachers on computers; attending training sessions together.

Technology equipment that works, printers, software, etc.

Update information.

Training.

Society.

Training.

Administration encouragement.

State standards.

Training.

Computers are very helpful.

Society.

Encouragement from others.

Peer pressure.

Society forces us to use technology, wonderful resource tool.

Inservices.

University classes.

Students love to use the computers, and when they operate properly, this is what encourages me.

Student help.

Training.

Staying abreast of current research.

Student's growth and enthusiasm when using technology.

Having the resources to do so on a daily basis would be encouraging.

Up to date equipment.

Changes in education when new equipment becomes available.

Having computer available in my classroom.

Interest of students.

Computers that do what they are supposed to.

Student involvement and motivation.

Training.

Available programs.

Accessibility.

The students enjoy using the computers and new software.

Training.

Peer teaching.

Conferencing and final drafts.

Students: Kids seem to enjoy learning on computers.

N/A

Computers that work.

Ease of use for students and teachers.

Benefit to students.

Available programs.

I am actually a computer education teacher as well as a history teacher so I am always

trying to gather as much info as I can in computer technology.

Training encourages me.

N/A

I would like my students to stay competitive with other students on both a national and a global level and technology is the wave of the future.

Modern technology, active boards, computers, printers, etc.

The students enjoy and are therefore attentive to the lesson.

Both training.

A computer lab that works efficiently.

What encourages me is to work with my fellow teachers, learning the computer and the software programs together.

Peer teaching encourage me to integrate technology into math.

Students seem to enjoy/ benefit from the technology integration.

N/A

Computer lab accessibility.

Having the equipment to do so.

Computers that work.

Technology that is uptodate and works when I need it to.

Computers: They enhance student learning through more in depth research while students are working on their project.

The students encourage me. They would rather do power point presentations over written work. I try to keep up for them.

Equipment: printers, software, and computers.

Other teachers.

Training and peer teaching.

Students: My students generally use computers to complete research assignments.

The training I have received allows me to assist my students.

Training: It is becoming more and more important to have computer skills in many careers.

If I had more computers in my classroom that would certainly encourage me.

Training, I have had good training in several programs; the students pay better attention to technology presentations because they are so comfortable with technology.

Training and to diversify learning for students.

The equipment that I need (computers, smartboard, etc).

Training.

Training and observing the success other teachers experience with integrating computer technology in their subject areas.

Useful and exciting tools to supplement any learning in the classroom.

Properly working computers.

Training.

Technical support being available when needed.

Peer learning, this is a modern approach to teaching.

Enjoy university classes and they inspire me to create new lessons that could even relate to other subjects using technology but we don't have the programs.

Technology that is new (computers, elmos's, etc.).

Computers, if I could have some computers for students use, I could show them how to make visuals that relate to their main subjects that would also give them grades.

Working with computers to help my students learn.

College courses helped me to become competent in these areas.

I use whatever is available to help encourage the students.

Training.

A computer lab where every computer worked at the same time.

Peer teaching.

Computers that are efficient and work fast.

APPENDIX F

PARTICIPANTS' REPLIES TO QUESTION 28

Question 28. What are the barriers you have found when trying to integrate computer technology throughout the major subject in your classroom?

Lack of training/equipment.

Our crazy schedule this year and time.

Access to lab.

Not enough training.

Barriers, how about computer that never work.

Many computers do not work or print and always seem to need repairs.

No computer teacher to help, assist, take care of tasks to save time.

Lack of computers in classroom, just got them hooked up in March 08.

Lack of technology.

Working on up to date equipment is the main barrier I find the most challenging in my
classroom.

Not enough computers in my building.

Software is usually shareware or not available in our district.

Student's lack of knowledge and experience.

Technical problems.

The cost of training to learn how to use the computers.

Malfunctioning equipment.

It (computers) doesn't always work.

Internet may be down.

Technology does not always work.

Blocked websites.

Not enough computers.

N/A

Computers that work only once in a while.

Computer lab is not always available for all periods of the day.

Student's lack of ability and knowledge.

Technology problems.

Lack of training.

Cannot afford additional computer classes.

Access to technology.

Malfunction of technology.

Computers that are outdated.

Lack of computers.

Network not operating.

Internet not working, computers not working.

Not enough computers or drives not available.

Computers that just don't work.

Availability of computers.

Access of computers.

Technology malfunctions.

Internet down.

N/A

Not enough computers.

Materials or documents lost on computer and must start all over.

One barrier is that I do not have any technology equipment in my classroom.

Not enough training for new technology.

Not enough computers.

Internet and documents down when you try to use it during class time.

Not enough computers available to each classroom.

Could use more training.

Money. It costs money to take classes, this is a definite barrier to me.

Would love more training.

Lack of computer in my classroom.

Computers that do not work.

Need additional computers in my classroom.

Technology in my own classroom.

None.

Access to computers.

Not enough computers.

Several broken computers in lab.

Not enough for entire class.

When computers/technology does not work.

Need new equipment (computers, software, etc.).

Time constraints.

Number of computers in the lab, not enough.

Lack of computers.

Lack of training.

N/A

Lack of appropriate materials and how to use them.

The cost of classes.

Training, it would be wonderful if had classes in regard to utilizing computers in our buildings.

Training, or lack of I should say.

Malfunctioning of the computers.

I wish I had more time.

N/A

Not enough computers.

Time and number of computers.

Not enough computers that run properly.

Lack of available computers.

Need more training.

Students limited knowledge of computer programs.

Technology problems, not hooked up right.

Need more computers in my classroom.

Things (i.e., computers) not working.

Only 5 computers with 25 students.

No computer center available to all my classes.

Technology is not hooked up appropriately.

Additional computers in my own classroom.

Lack of computers.

Very limited experience with the technology.

Need more supervised assistance with programs.

Too little time to learn and there is no one to sit down with me to teach me.

I am still learning exactly what and how some of the new technology recently purchased works and runs. I am still a bit apprehensive.

Additional training.

The lab is nice, but I would like to have the computers in my classroom. This is a definite barrier to me and my students.

Time to learn more.

Computer glitches that I cannot fix impede instruction and take up too much time.

Technical problems and my knowledge of the correct ways to handle them.

Time permitted in computer lab.

Lack of fund which prevents me from seeking additional classes.

Lack of student access to computers outside of school (home).

Could use more time to learn how to use the computers, more training.

Not enough computers.

Lack of working computers in lab.

Not all computers connected to our one printer.

Not all computers have the same programs for consistent instruction.

Technical difficulties, just recently received a cord for my LCD projector, after having the projector with no way to use it.

Technical problems.

More students than computers.

Students who do not have access to computers at home, this is a barrier.

Computers not working.

Access to technology is limited.

Lack of training.

We have very little to offer. We used to be cutting edge in technology. Now we seem to just be cutting technology.

No equipment to use in my classroom.

My time is very limited with career and family, I cannot find the time to attend classes outside my work day.

There's a lab but signing up can be difficult.

The computers are outdated.

Computers that do not work, not enough memory or printers for the students to print out at one time. This is frustrating.

Computers don't work.

Not enough memory for computer to use software provided.

Lack of use time in the lab.

N/A

Not enough training.

Time constraints.

Not enough planning time.

Not enough time to cover materials as the state dictates for the state tests.

If the material is not on the state test we don't have enough time to cover it.

Cannot access the computer lab.

Barriers? Not enough computers.

Good websites availability if co-workers are there to help when you don't know what to do

I do not have the time to go out and take additional computer classes.

Students need to learn more with regard to the basics, so they are prepared to use.

Microsoft Word, Excel, etc. when they get to the middle school.

Need more training, that is a definite reason for a barrier.

Additional computers and printers.

Lack of computer availability.

No time when trying to cover state content standards adjustments.

We do not have enough computers for each student to have his/her own.

We do not have enough classroom time for planning and/or implementing efficient computer integration.

Lack of time and training.

Keeping the students on track, they would rather go to the internet.

Until several months ago I only had 9 computers in one classroom to use. The problem with that was the time element with 29 in one class it took 4 days to let everyone use a computer. Now we have a computer lab so each student has a computer it's great!

Need to add more computers to each of the individual classrooms.

Lack of equipment.

Lack of training and knowledge.

Computers that work when you need them to.

Time to do projects and teach all the students.

N/A

The software I would like to use stimulation does not exist.

Computers aren't powerful enough to do what I want sometimes.

Not enough (computers) in the building that make is accessible.

Outdated computers.

Time in the computer lab.

Memory, up to date computers.

Computers that do what they are supposed to.

Students need to be more knowledgeable.

Not as versed as I would like it to be.

The fact that I don't have one in my classroom doesn't help.

I have very little training so I do not integrate computer technology much at all.

I wish I knew more.

The students know more than the teachers, need additional training.

I do not use united streaming for video clips as I do not have the knowledge.

There is no encouragement at school.

Newer computers.

No money for buying technology to use in the classroom.

Time constraints.

I do not use computers in my math instruction due to the demands of the math curriculum and the lack of time to cover all math standards.

Up-to-date computers.

Lack of computers in my building.

Students outnumber the computers. Hard to teach a class that way.

Computers that are so outdated, you begin to work on them, and they freeze up and stop working.

Computers that do not work, these are both in my classroom and in the computer lab.

APPENDIX G

PARTICIPANTS' REPLIES TO QUESTION 29

Question 29. What factors would you look at to help you decide what types of additional computer classes/in-services to enroll in to help you better integrate computer technology throughout the major subjects in your classroom?

Ties technology to students.

We need a full-time teacher, someone to take care of the one lab that we do have. (I do not want to waste time down there in attempt to fix things myself.)

I would like a refresher course in computers.

The actual training, what would it involve?

I would have to look at the computer technology in my building first before taking any classes.

Time.

I want to recreate my own web page!

Classes that tied computer technological based information with content standards.

N/A

Do I have the time needed to take additional classes or in-services?

Cost is a factor.

How will this class help me to help the students?

I would benefit from classes on current software available.

Length of training.

Will it benefit my students with special needs?

After the class, will I be able to use computers in my building?

Time.

Can the students use what I learn in this in-service.

Availability.

Price and timing.

Content of in-service, location of, and application.

Cost.

Time would certainly be the most important factor for me.

Will the classes give me what I need to incorporate the technology into my classrooms?

Location.

Training and dates.

The cost of.

None.

The students: they would be the main factor. Will this class allow them to learn?

Could be in-service or classes at the college, but would it be applicable for me to take
back to my students?

Cost, who's training, location, application.

One factor for me would be the computers in my building.

Student's needs.

Time and location.

Again, with a career and family, would I have the time?

Subject, grade level.

Time and dollar amount.

What will I learn in the training? Will it be useful?

None.

Will the class or in-service allow me to serve my students in a better capacity?

My students, will this class help me to help them?

Convenience and small group training.

Will the computers at school accommodate what I learned?

None.

Topics.

Time.

How much money would it be to take classes?

How will my students benefit from the class? They would certainly be a factor.

I would love a class that would help me use the Ohio State Standards in my classroom.

Long distance learning, hands on delivery.

Will there be someone at my school to help me with the technology to put into practice
with my students what I learned.

I could use the computer if I had the stuff I was promised.

Classes that train new things and allow us to actually put our kids name in and
accomplish something. Not we show you, you go back and try it someday on your
own. This does not work.

Time.

What would be the course content?

I try to determine if I will be able to use it in my classroom and if the technology is
available in my school.

Is the professor a teacher him or herself to help us use what we learn when we return to our classroom so that our students will benefit.

Will it (the class) be beneficial for the students to spend the time on the computer?

Will I learn what I need to learn?

Cost would be a factor.

Consideration of the students. Will this class provide me the training I need to incorporate technology with them and the classes?

Will it help the students meet the ODE Standards?

Curriculum decisions, what I want to teach and accomplish.

When offered, I do not want release time, what was offered was useful to my grade level/subject

Factor would be my time. Do I have it to spare?

The cost of the Inservices or classes.

Will the training provide me enough information to go back and take it into my classroom for my students to be able to learn differently?

Training, will it be long enough so that I can actually learn how to integrate technology into my classes

Students and computer availability.

My technological abilities.

Programs that the schools has available or are willing to purchase.

Availability and need.

Depends on what the class is about. One factor that is important to me is that I can utilize the knowledge I acquire with my curriculum?

Time.

My students are always my first consideration or factor in this case.

Hands on training classes, with those taking place in a computer lab.

Money.

So little time in our schedule to cover all needed content standards.

I would look for things that would be language arts oriented and focus on using the technology I have available (Elmo, Interwrite, projector).

Time.

I believe that I have all preliminary instruction needed based on the opportunity for me to use in my classes, ability to implement based on standards I teach or use in a science lab.

Training is a factor. Will it help the students as well as myself?

They should be directly related to student learning and obtaining knowledge.

I would appreciate if the instructor would be patient and recognize that not all teachers are masters of the computer.

Time would be my main factor.

What would be the benefit to my students? Should I take the class?

Have the teachers that are teaching the class, taught at the middle school level? This would be an important factor to me.

If they went back to the basics and told me specific ways, not universal, in which to incorporate them (computers) into my lessons.

If there was a basic class to help at my district.

Time.

How much money will this cost me?

Training. Will they take the time needed to teach us what we need to learn?

How could I better use the textbook using technology?

Programs that would help me teach the standards.

I do not see a point in learning about it if I cannot use it.

Will the class prepare me to integrate computers technology throughout my classroom?

I feel that until the school district is able to support this learning, today's technology is
futile because of ever changing climate in this area.

Is the technology available at school?

Students are my factor. How can this class help them?

Time.

How expensive are the classes or in-service?

Will the classes be tied to the State Standards?

I have IPod podcasts photography, audio/TV and Wiki in my science class. I would like
to incorporate more types of programs.

Credit for classes.

Will the computers be working in order for me to use them after the I take classes?

In-services or classes that spoke to curriculum which is being taught at the middle school
level.

Who is offering the training?

N/A

Will I be able to bring everything I learned and share it with my kids?

Training needs to address the Ohio State Standards with regard to No Child Left Behind.

I would like classes that would help me with the smartboard.

My time is very precious.

N/A

How can they improve instruction?

How will the teacher present the class? Will we use technology during our training time?

Time.

My homeroom students need to receive the benefits of my taking classes. They are the factor with regard to this question.

Hour's location of in-service.

N/A

I would look for classes and in-services that give specific ideas that align to the State Standards.

Has the professor or the person conducting the in-service taught at the middle school level?

Availability of classes to fit into my time frame.

Time.

Does the class in-service focus on middle school social studies? Sometimes the focus is too broad.

It is important that the middle school concept be included in the training.

Time.

N/A

Would this class or in-service be to my students advantage? This is a factor, my students.

Matching software to curriculum and standards.

N/A

The training needs to address the Ohio State Standards.

In-services.

Time.

Who is doing the training? Will I learn from this class?

Is there equipment available in my building so that I can practice what I learn from the classes?

Availability of schedule.

Time.

Cost.

My students.

N/A

Relevance to subject areas in the middle school.

Training; is it important to me that I can take back what I learn and actually use it.

More computers available to all students.

N/A

If a certain feature or program is available to our school.

I'd ask schools that are actually using it.

Available equipment.

Will the training enable me to integrate technology with my classes?

Time.

The children in my classroom. Would I even be able to "integrate computer technology throughout the major subjects?"

N/A

When they (in-services) would be available.

Information on how to use technology in various content areas.

One of the factors should be that the person doing the in-service or teaching the class is a middle school teacher themselves.

Can I use what I learn at my school?

How will it enrich what I am doing with my students?

Relevance to my area.

We get great updates through HR person at Trumbull County Educational Service Center.

How will the class speak to the Ohio State Standards?

N/A

The factor for me would be my children in my classroom. Can I better serve their curriculum needs if I take a class?

I would look at standards and achievement tests.

Time to practice and become more comfortable with different programs.

Time.

Will the focus of the class be about integrating computers into the major subjects?

How easily I could incorporate it into the parameters of my job.

N/A

I'd look at where the class was offered. I'd also look at the in-service itself to see if I could use it with my students.

How will the training allow me to learn? Will we use computers?

Test scores, how well did the students do using the technology, feedback from students.

If I could actually use it

My homeroom children. They are the most important factor.

Cost of the programs.

The course content of the in-service or class.

It's not something I feel I can add to my teaching at this time.

Refresher workshop on smartboard as its been about 8 years.

Availability of what is being offered.

I feel comfortable with my computer skills. I would just like to have a computer lab with
a full-time person there so I could send students there for research, etc.

Time offered.

N/A

Excel laptops that work, programs that the school would purchase for me would make it
affordable for me.

Location of training.

Expertise of presenters or teachers.

Cost of class.

Time schedule.

Will there be computers in my classroom?

If it would help my students utilize computers to track data over time.

Relative to instruction of Ohio's grade 8 science standards.

Time is a factor.

We need in-services that are practical, basic, and local with more time than a 45minute breeze through.

Something to enable me to create a lesson for my students.

We need an expanded course on the Smart Board.

I would benefit from one-on-one training, especially for SmartBoard use in my classroom.

Are the classes useful?

Are they cost efficient?

Time.

Availability.

Cost.

APPENDIX H

PARTICIPANTS' REPLIES TO QUESTION 30

Question 30. Describe the most recent professional development activity regarding the use of computer technology in which you have participated (e.g., workshop, mini-course). Please give the year you participated in this activity. Was it useful to you in your classroom? Why or why not?

A few years go we had a great workshop where we learned to design a web page for the schools website, highly beneficial, I would like another.

2007-08. This year we went to an ESIS training, not beneficial at all, waste of time.

We could have used step-by-step instructions on a few handouts!

2005-06. Homeroom.com/scantron.

Brief workshop on how to use program "Success Maker." Yes, students are now using the program.

Fall 2007. Workshop at the county on using QUIA, Wiki spaces.

September, 2007. In-services training for E-sis and ThinkWave systems.

2007-08 school year. Workshop regarding the use of software for an airliner. The workshop was very useful because it helped me to better understand how to use the airliner so that I can incorporate its use in my lessons.

2003. Worked on Gradebook software. This was very simple to use in my classroom.

April, 2008. Visited subject sites in the computer lab, shared ideas among colleagues.

April, 2008, visited subject sites in the computer lab.

2003. Learning how to use Gradebook. It helps me to keep track of my student's grades.

2007-08. ESIS training, it was helpful.

2007-08. Workshop, ESIS. Beneficial.

2007-08. During in-service days, very helpful, ESIS training, looking forward to more Summer, 2006. Building and maintaining web page. Helpful in providing resources to students/parent. Helped with incorporating PowerPoint in the classroom.

2007-08. School in-service, web research, and yes, helpful for lesson instruction.

2007-08. Smartboard.

2003. Used something called Gradebook. This helps me to keep track of my grades, points, etc.

2007. ESIS computer navigation, very useful, but unable to do in my classroom.

Smartboard that did not apply to me, as I do not have one.

2007-08. ESIS training in house.

2008. ESIS, very useful the in-service explained details.

2003-04. Gradebook. Yes. I can share this with other teachers and we are able to help each other.

Online tutorial SmartBoard. Useful as I have one in my 6th grade classroom.

2007. Took two long distance learning courses at YSU. Challenge to have to rely on emails, IMS, and virtual office hours, curriculum stimulating and useful. I had to write design, and create technology based on units for current students. One was about Youngstown's past, present, future. The kids had to develop a plan that would enhance the 2010 project and interview Youngstown natives to gain insight. Writing and developing instructional design for kids using technology.

Framework and storyboard of the website.

2003-04. Gradebook In-service. Easy to learn and understand.

Fall, 2007. One training on ESIS and ThinkWave. Useful but not for educational purposes.

January, 2008. Study Island. Great program for students to use as a supplemental and help prepare for achievement tests.

Fall, 2006. Read 180, very helpful for struggling readers. Used as a part of the curriculum in special education classes.

2007. Workshop. Useful, I use the programs daily.

I don't remember.

Summer, 2005. It was on distance learning, not really useful. Technology didn't work well most of the time.

2003-04. PowerPoint and Microsoft Word. Yes. I use this everyday in my classroom.

Fall, 2007. SmartBoard training, not technology, which I now use.

2007. ESIS training for a grade and attendance. Yes, use it everyday!

2006. Elmo. Yes, Very useful in the classroom.

2006. Elmo. I am able to use this with my students. Very helpful.

About three years ago at a workshop, it was OK but not relevant for the class I teach.

Summer, 2007. I taught teachers how to use a smartboard and airliner. The class was to get the teachers the basic knowledge needed to begin it in their classes. It wasn't useful for me.

All teacher sessions (without techno devices) in cafeteria. Training on computers in cafeteria without computers. This person is a dumb-ass. Not useful because I

didn't get to practice what they taught, too much to do at the beginning of the year.

Workshop at school, not enough time, technology still not working.

2007. ESIS training briefly. Very useful but could have used more time.

Crick software and Cloze Pro. It is easily differentiated and works for many subject areas. It will be useful once I become more familiar with the project.

2008. One-half hour demo with man who sold our school Elmo and Interwrite pads, it was useful, but I wish it had been longer and I would have known that I was actually getting those pieces for my room.

2006. Interwrite. Yes. Helped me with classes I teach.

2006. County liaison meeting, yes there were helpful websites.

2006. In-services for Interwrite pads and document cameras purchased for our Science Department.

2005. Demonstration on ELMO. I don't use it due to class size.

2005. Smartboard demonstration. The instructor moved to quickly and assumed all teachers were competent (1/2 session not sufficient time).

2008. I am a special education teacher. The most recent computer in service was on ESIS, the program for writing our students IEPs. I participated in this mini in-service and it did clear some of the uncertainties up.

2007. We had to go to a Study Island presentation we watched a demonstration for smart boards.

2008. We watched a demonstration for smartboard and on Elmo. I don't have access to The Elmo which I would use. I have a Smartboard but have not had time to learn to use it.

2003. Video conferencing and using video and computers. Was not useful because we did not have the necessary equipment.

2005. Moviemaker. Not useful because I do not have computers in my classroom

August, 2006. Workshop, Technology in Classroom. Yes it was wonderful and very practical.

2008. Workshop using Smarts Boards. Not useful. I cannot get the school to provide one.

2007-08. In-service on Thinking Reader Program. Yes it was easy and helpful. I use the computers almost every day with kids.

2007. Workshop, not useful, no programs generated for language arts.

N/A.

2006. PowerPoint and Word. This was very good as I used it in my classroom.

2006. Microsoft Word and PowerPoint. Yes. Students are able to work with both during their classes.

2006. PowerPoint and Microsoft Word. Yes. I am able to integrate both of these in my classes.

2005. Mini workshops at the County Office for first year teacher. Not useful.

2007-08. We were trained to use the ESIS for attendance and grade reporting. It was useful, used regularly.

2008, Just completed master's degree this spring from Walden University on Integrity

Technology. In the classroom it has been useful because I learned about web resources I can use.

2006. In-service introduction of the new features of a program. Very helpful, in 8th grade individual career research project it has many of the answers to the various questions.

2004. I attended two workshops in smartboard.

Lab on pod casts and websites.

Masters degree.

2006-07. Smart Board in-service. My students love to use this in class and enjoy doing so.

2006-07. I attended a Smart Board in-service. Yes. This is very easy to integrate with all my classes.

2006-07. Inservice for Smart Board. Very helpful, as this is a fun technology piece of equipment to use in my classroom.

2006-07. Smart Board. Good in-service. This involves my entire classroom being involved in learning.

2006-07. Had a Smart Board in-service. Students enjoy working with this and learning with it.

2006-07. Workshop on Smart Board. Yes. I am able to use for all of the classes I teach.

Mini course. Yes for our attendance.

2007. Workshop on Wiki's. It was useful in helping create a reference source for science class.

February, 2008. Ohio Technology Conference. It was interesting as always very informative. I found out about world book online. Great!

Workshop on website for classroom positions.

Fall, 2007. ESIS training.

Workshop FERPFCEBM. Yes it helped with us to integrate technology for the contract.

2008. The JASON project through National Geographic. It will be useful next school year when integrating science and language arts.

Workshop couple of years ago it was helpful.

I took a course on how to read and interpret students scored on achievement tests.

2007. Training for gradebook. Not really pertinent for classroom.

Each year we use a program called "Study Island" to help prepare students for achievement testing.

2007. Workshops. Yes, needed it to write reports and submit grades.

2007-08. This year I attended an in-service at the Trumbull County Educational Service Center. It was very useful because there were many computer teachers on hand.

It was an "in-house" workshop, which was useful because my struggling readers needed it.

2005. Professional development. ESIS gradebook. Yes, but learning was done on my own time over and above other teaching requirements.

March, 2008. I participated in a college entrance exam workshop this past March. It was administered online, but it was not terribly useful in my classroom because the material was advanced.

2007-08. ESIS training-on gradebook- was the most recent training (this year). Yes, it was all year.

2006. The most recent professional development activity was probably how to integrate Study Island program into math, science, reading, etc. I believe the mini-course was two years ago? Yes it was useful and I still use the program once a week with all my classes.

2006-07. I had smart board training. It was not useful because I have zero access to a smartboard.

2007- ESIS training in school. Yes, I love working on ESIS, it is a great tool!

2007-08. ESIS training in my school. Allows me to use it in my classroom.

2007-08. Workshop with ESIS. I am able to use in on a daily basis.

2007-08. Inservice ESIS. I use this in my classroom every day.

2007-08. ESIS. This is very useful and helpful for me in my classroom.

2007-08. Training with ESIS. We were trained to use it.

2007-08. ESIS. Very easy to use while in my classroom doing other things.

2007-08. ESIS workshop. This is very easy.

2007-08. ESIS. Allows me to use this in my classroom.

2007-08. Workshop for ESIS. We all learned it together, so we can all help each with it should we have any problems.

2007-08. ESIS. I use this everyday in my classroom and it is easy to use.

2006. In-service on how to use our new textbooks online. It was useful to the students at home (if they forgot their book at school).

2008. Current FERPCBM math workshop for 7 to 8 grades at YSU w/Dr David Pollock (math) Dr. Howard Pullman (Teacher Education).

2007. Smartboard it was informative but not enough “hands on.”

I took professional development on Web Quest. It gave me ideas to incorporate with my class.

2007-08. Smartboard training.

2008. Setting up a teacher page for parents and students, I hope to have this up and going well next school year.

2007. In-service on using active board, workshop. It was not useful because I do not have enough computers or a projector with my computer in the classroom.

2007. In-service workshop, it was useful up to a certain extent. We didn't have enough training.

2008. Turning Point Technology, using the clicker system to answer questions and practice for Ohio Achievement Tests.

PowerPoint and Turning Point Technology. No, I don't have a way to show it to the class.

Workshops, we have only had a few opportunities to experiment with it in my classroom, as my individual time with students is limited.

2003. Update our Jackson grades

2004. Websites. Creating your own.

2008. Designing a web. I use this in my classroom.

2008. Web Design workshop. Students are very helpful with this and they enjoy working on it during our day.

2008. Web Design In-service. I will have this up and running for my next school year.

Spring, 2006. In-service, we are not permitted professional days.

June, 2007. I took a workshop on Microsoft word so that I could learn more about the program and create charts more quickly. It helped some but I need more time to work on my own. If I don't practice I forget.

2008. Developing a Web page. This has allowed me to design my own web page for my class to use.

2008. Learning how to develop a web site. My students will be able to help me with our site.

2008. Web Site development. My students and their family will benefit from my webpage.

The most recent computers professional development was the use of the gradebook, but it was so rushed that I did not get it. They tried to show us how to use it (gradebook) in 45 minutes.

Fall, 2007. Searching websites.

2007-08. Research on the web. I am able to integrate what I learned from this class on the Internet.

2006-07. Web research for the classroom. This is very useful with my students.

2006-07. Web Research. My students really enjoy going on-line to learn.

2006-07. Researched the Web. This is very helpful with my teaching.

2007. Workshop at our school Webcam.

Each year we have some type of in-service in technology and the advances or changes to our systems.

None.

None.

June, 2008. Training session for on-line report cards.

Smart Board representative gave presentation to entire staff.

2006. In-service at school. No, it was not useful. She kept repeating herself from the previous in-service. I was very bored; I did not learn anything new.

2008. At an in-service. The instructor went too fast for me. I needed more time to work on it. Needed time to try it out in class. It was presented to us at the end of a school day.

N/A. Seven people marked N/A on their paper with no responses.

APPENDIX I

PARTICIPANTS' REPLIES TO QUESTION 31

Question 31. Describe the most recent college or university course regarding the use of computer technology in which you were enrolled. Please give the year you were enrolled in this class. Was it useful to you in your classroom? Why or why not?

N/A

1997. At YSU in graduate school perhaps in '97. I had a computer technology class. It was pretty basic stuff. I think learning Excel and different programs was the highlight, we didn't even get to PowerPoint!

N/A

N/A

Not since December 2001. Webpage designs, useful to me but do not use it for my classroom because of equipment and software availability.

Did not study education in undergraduate classes.

2008. Recently took a course on excel. Useful for record keeping.

We take classes in the summer during OUR time. Good but the software is too expensive.

September, October, November, 2007. We got so much new technology with new building that we had session after session. Too much of an overload and I remember very little because I was so busy planning new curriculum.

2004, I took 30 semester hours in technology from Fresno Pacific and I finished the classes. The technology was helpful in that it gave me a better understanding of the various programs I use during the day.

2008. Yes, had many great ideas for integration in the classroom.

So many years ago I can't remember.

I didn't take any.

2005. Education technology. Not really helpful, low attendance.

Fall, 2003. Technology for Teachers. Very useful class if you were unaware how to use basic programs (Word, Excel, PowerPoint). We also used imagination (great program but not available at school). Teacher web- created a website for students to use the computer on a specific subject area (web quest).

Spring, 2004. EDTC 3771 course (technology for teachers). The course serves as an introduction to the issues, pedagogies and skills associated with the use of technology in the educational process. Experiences with computers and educational technology include computer productivity, software, information retrieval sources, and creation of instructional materials, selection/evaluation of.

None.

Summer, 2006. Web design, PowerPoint, locating resources.

Summer 2006. PowerPoint, web design, resources, YSU class.

None.

Summer 2006. Incorporating the Internet in the classroom. Yes, made me aware of specific and better resources available to students and me.

None.

Not for a long time.

None.

2001. Credible website to enhance course instruction.

Educational technology web site. Web quest, never used it in the classroom.

None.

1998. PowerPoint in the classroom. Very informative and useful, but our school was not equipped at that time to use pp.

1996. So long ago, I can't remember.

Fall, 2007. Instructional Design, distance education and online information.

dissemination. Very helpful in planning and executing technology related materials.

Never enrolled in it.

2001. We were taught to use a variety of programs. Word, Excel, PowerPoint and how to link websites to them and to post our work to a website.

2003. Graduate English. Professional writing class in document design 2003. My school did not have access to those programs.

2003. YSU into technology in teaching course. Yes and no, most helpful was website design.

1996. It helped me to learn how to use website.

It was many years ago I took the class for a pay increase plus I wanted to learn. Yes, this class from Walsh University was helpful.

2004. I took a basics computer class during my undergraduate studies. And aside from the power point assistance, I couldn't go back and complete the assignment she gave us, unfortunate.

Cannot remember.

1999. Hyper Studio. I don't think this program still exists.

August, 1993. Multi-media in the classroom. It was helpful, but now is outdated.

None at the university level.

2001-02. Bachelor's degree. Useful, I don't remember.

Kent State University- to computer office suite didn't really help because I had taught all that before.

N/A

N/A

Basic Microsoft Office.

I never had a computer technology class at a college.

N/A

I have not taken any college course involved with computer technology although we have discussed on-line research as part of library serve classes

September, 2006. Walden University. Technology classes. Very useful.

May, 2008. I got tremendous amount of knowledge in the core classes and learned some new technology to implement.

Yes, and we have a technology staff that can provide come help for problems.

2005. Website Design at Kent. It was helpful in creating and maintaining web page for my classes.

N/A

N/A

It was a class that taught how to make website, etc.

N/A

2001. YSU. Technology in the classroom. It was extremely useful. The class taught how to create websites in depth; PowerPoint, Scavenger Hunts, etc.

YSU, 2007-08. Yes.

N/A

N/A

1980. Do not recall; maybe in my undergraduate years.

2004 helped develop lessons.

Have not had any (other than workshops that provide info on websites that can have helpful material for planning lessons).

2004. Technology for Teachers.

2003. I took a computer web page class. It was useful but not taught very well.

2005-06. My recent experience was at the Trumbull County Education Center. It was useful because it helped me “map” my year of standards.

N/A

2006. I think it was technology for teachers at YSU. It was incredibly useless. We weren't taught how to insert pictures in a word file, how to embed sound clips, create a PowerPoint, totally uninformative.

N/A

2006. It was a master's class in integrating technology into the classroom. I think it was two years ago that I took the class through Ashland University. I gained some useful things and some that were not.

2000. I think it was in 2000 when I was an undergraduate student. It isn't very useful now, but back then it was, then it was pretty basic.

2006. Education technology. Yes helpful. I learned PowerPoint, Excel, Word, websites, and other tools!

I can't remember (It's been awhile).

Fall, 2006. Creating Web Quests and using Dream Weaver. Useful? Yes, we had to create things we would use then reflect on the success.

YSU; a course on Excel. I forgot most all because if you don't use it you lose it!

2007. YSU last year, but I had no computers, none!

1998. I had taken courses through Kent State many years ago (10).

Technology for teachers YSU. No I would need a projector screen for my computer.

None for quite a long time, mostly get training for TCESC when offered.

2008, Technology for Education. Yes, it showed the basic functions of Microsoft Office that could be used by teachers and how to create web pages and web quests.

1999. Class of Windows, computer programs. It is useful because students use Excel in class.

1992. Various computer programs, keyboarding. It was very useful because it helped me to be able to help students with simple computer usage problems.

None.

1992. Technology for Teachers. Basic computer skills. No, because I already knew what they were teaching us.

2007. Integrating technology into the elementary classroom. Developing web based project. It was useful because I walked away with actual projects to use in my classroom.

None. 2007. Integrating technology into the curriculum. Master's level course. Very useful because it gave me useful strategies to implement in my curriculum.

None.

APPENDIX J

PARTICIPANTS' REPLIES TO QUESTION 32

Question 32. Does your school provide any support for you to integrate technology in your classroom? If so, what type of support is offered?

No.

No. Well, last year I did an international book selling project with a class in Israel, but it was like pulling teeth from our computer technology guy to get it all set up for us so I would say little support is given.

No.

No. Not that I am aware of.

None.

No support, besides the computer instructor.

Yes. Updates on technology in-services at the beginning of each year.

Yes. Technology support, one person is in charge of computer support and integration.

Some at the beginning of the year. There was a workshop for the smartboard/airliner software.

Yes, cooperative teaching, multiple workshops.

Yes, I will attend a training class a week from now.

Somewhat, we have a computer lab and four student computers in our classrooms.

Yes. Yearly in-services regarding various components, technology conferences.

No.

Yes. Computer lab if you can get in.

Yes.

Very little if any, most of the time teachers help other teachers before school or during planning periods.

NO! A computer center that is available to only $\frac{3}{4}$ of my class.

N/A

Yes. We have professional development days.

No. One day but that isn't enough.

Yes. Starting to provide necessary tools.

Yes. They sent me to professional development.

Yes. A lot of technology, five computers in each classroom, two computers labs, projector in every room, smart boards in math classrooms, and airliner throughout the building. Technology people within the district to offer support.

Yes. Technology advisor.

Yes. Technology department is helpful.

Yes. But need more technology.

Yes. In-services.

No. Not for a long time.

Yes. Technology guy.

Yes. Monthly meetings.

Yes. Frequent workshops.

No.

Yes. In-services on many topic, and they offer college credit.

Yes. Technology coordinator, but technology is limited.

No. Nothing.

Yes. There is a computer person in our school.

Yes. We have computers in our classrooms and in our computer labs.

Yes. We have two technology persons on staff.

Yes. We attend county workshops.

No. There is no technology support.

Yes. Professional development.

Yes. Technology staff helps whenever asked.

Somewhat. Depends on what we are covering and the availability of the computer lab.

We have two computer support people to help with problems, but not to teach us how to use it.

No. Most of the time our one printer does not even work.

Yes. Our school is supplied with enough computers.

No.

Yes. Technology is in each of our classrooms.

No.

Yes. Technology support.

Yes. At the beginning of each school year.

Yes. We have workshops about computers.

Yes. Training.

Yes. Computer training.

Yes. Technology advisor for the district and one in our building.

Yes. In-service when new programs are required.

Not really.

Yes. Our schools have four computer labs and most recently purchased laptops and smart pads, and Elmo projects for the language art rooms. The other subject area has smart pads and projectors.

Yes. In-services throughout the year regarding technology.

No.

No.

No. Teachers helping teachers only.

No.

Yes. United streaming, Elmo, Smart Boards, Study Island, quick 30minute or so presentations. I need to sit with someone and do it one step at a time.

Yes. We have four computer labs we can sign up to use.

No.

No. That is a major problem.

No.

Yes. They provide computers and in-service days to learn program.

Yes. Provide a new lab with access.

N/A

Yes. I have an LCD projector screen in my classroom and technology assistance is good about helping me when there is a problem.

Yes. We have a technology staff that can provide some help for problems.

Yes. Some occasional in-service.

Yes. We have training to update us on our existing computer programs.

Yes. Our technology coordinators in-service for the district building or individuals on as needed basis. We also wrote a grant for a computer lab this school year.

N/A

Yes. Implemented a new lab this year, purchased a Smart Board for science lab

Yes. Technology man.

Yes. We have technology instructors in the building and a computer tech gentlemen.

Both are very helpful to us.

N/A

Yes. Mini courses.

Yes. Additional money for programs.

Yes. We can take any professional development that we want.

No.

Yes. There is a technology committee in place for support.

Not really, we are short on technology availability.

No. Very limited help on technology.

Yes. Technology advisor at school and middle school somewhat.

Yes. County workshops.

Yes. Computers in the classroom and two computer labs.

Yes. As we have a technology person and teacher in building.

No.

No. Not really.

Yes. During our in-services.

Yes. We have several labs.

Yes. Flyers are distributed with information about workshops that provide training on technology.

Yes. Technology person and other teachers.

Yes. Availability of the computer lab and also computers are in the classrooms.

No. Not really.

Yes. We receive up-to-date equipment.

Yes. We are introduced to certain programs like Study Island which are useful.

Yes. Encouragement, but no time to try new things.

Yes. Absolutely. Other teachers help out, our technology coordinator is top notch, he set me up with my own website.

Yes. We have a technology coordinator who is very helpful.

Yes. We have several computer labs set up to take our classes.

No. I think our school is fine with technology if you (the teacher) write a grant for your supplies. If you ask the school for technological support, its not likely you'll get it.

Yes. Provides in-services.

Yes. When time and equipment is available, so is the support.

Yes. We have a computer technology staff member in the computer lab.

No.

Yes. We receive assistance.

Yes. We are getting our computers updated.

Yes. But we have very limited resources. Turning point technology grant was used and integrated in my class.

Yes. But there are not enough labs, however, after school classes are available.

Yes. Computer technology people.

Yes. One way is to develop pictures from the school's camera. Pictures are updated on our website.

Yes. Through in-services periodically throughout the year.

Yes. We have a computer tech. person in our building.

Yes. In-services.

Yes. White board training.

Yes. Through workshops.

Yes. We have a technology coordinator; he encourages us to try new things.

Yes. Available computer labs can be reserved.

Yes. There is a committee that looks at computer problems. Very helpful to us.

Yes. By the technology coordinator.

No. None offered.

No. Nothing.

No. Only support from other staff members.

Yes. We have a technology teacher in the building that helps us.

Yes. I have three students' computers in my room.

Yes. Workshops are offered throughout the year.

Yes. We have a computer tech.

Yes. Through workshops offered by our principal.

Yes. Our technology teacher is very supportive of the teachers.

Yes. In-school technology coordinator.

Yes. Encouragement from the principal.

Yes. Our technology coordinator is available to help the classroom teachers.

Yes. Support through in-services and our computer instructor.

Yes. We are provided in-services and materials.

Yes. We work together as a staff.

Yes. The computer teachers is very helpful.

No. It is not encouraged verbally.

No.

No.

Yes. We have quite a bit of technology, computers, new programs.

Yes. We have technology support.

Yes. By attending workshops.

Yes. The technology teacher is very supportive.

Yes. Workshops and in-services.

Yes. The computer lab is excellent and so is the teacher.

Yes. Through in-services provided.

Yes. Computer teacher helps us whenever it is needed.

Yes. The principal provides money for equipment and also provides in-services for us to attend.

No. No support.

Yes. We have in-services and equipment needed.

Yes. The principal and our computer technology person are very supportive.

Yes, technology coordinator.

No. Are you joking, my school doesn't even have competent technology support. Our computers are six years old. Our computers have been down for four days. All my school cares about is cutting staff, salaries, and courses. This school is educationally incorrect.

No. Not really, they only give a quick look at web sites. Anything that I have learned is through university credits.

N/A

N/A

N/A

No. No support of any kind.

Yes. We have two technology teachers. They help when needed.

Yes. In-services.

No. However, we do have a technology committee.

No.

No Responses = 3

APPENDIX K

PARTICIPANTS' REPLIES TO QUESTION 33

Question 33. Does your principal allow time for teachers to network in regard to integrating computer technology? If so how?

No.

No. There is NO TIME this year with our crazy schedule. I'm sure they would like it, but no professional days were given, we have had too many reading and DIBELS meetings on professional days!

Yes. We have in-services together.

Yes. During our planned in-services.

No.

N/A

No.

No. Not really.

No.

Yes. During our planning time.

No. He would, but we do not have a common planning time and our school day is not over until 4:15, and no one wants to stay that late.

Yes. Staff meetings, in-service day, and waiver days.

Yes. During staff meetings, in-service day.

Yes. Planning period.

Yes. Staff meetings.

Yes. Common planning time, technology is not the focus of that time.

Yes. During our planning times.

Yes. During our staff meetings.

Yes. We meet during planning periods.

Yes. After staff meetings we network.

Yes. During our in-services that our principals provide.

Yes. We are allotted time to work together.

Yes. Additional outside resources.

No. Not provided.

Yes. Planning periods.

Yes. Principal encourages by sharing during in-service time.

Yes. If you let him know what you need.

Yes. Monthly meetings, frequent workshop.

NA

Yes. In-service day, waiver days.

No.

Yes. In-services.

Yes. At in-service and after staff meetings.

N/A

I do not understand the question.

Yes. In-services at the beginning of each school year.

Yes. Team meetings, organized technology meetings are available and open to all in the district.

No. Not that I am aware.

Yes. Schedule is set for teaming.

No. None.

No. There is no time.

No. No free time this year, next year they are adding more duties and meetings times to our schedules, yikes.

Yes. Our principal is very helpful when teachers want to use technology in our classes. He allows time for teachers to work together and encourages cooperative learning.

Yes. After staff meetings. We meet and network with other teachers in our building.

N/A

Yes. During our in-services with regard to technology.

Yes. Staff meetings first, then network with others.

No. Nothing.

Yes. During our common planning periods.

No.

No. No time.

Yes. Throughout the year, mostly at the beginning.

Yes. We sometimes are allotted extra time during our lunch break.

No.

No. There does not seem to be enough time.

Yes. Professional in-service days.

No.

No.

Yes. In-services.

Yes. Planning times to collaborate.

No.

No.

No.

N/A

Yes. We are provided time to meet weekly.

Yes. Professional days.

Yes. In-service days during the year.

Yes. We meet monthly as a staff.

Yes. Team meetings.

Yes. Time to collaborate with our team teachers.

No.

No.

Yes. We meet after our staff meetings.

Yes. As a staff, he allows us time to work on technology.

Yes. Always makes sure the team teachers have time to meet.

Yes. Common planning time for team teachers.

No.

No.

N/A

No.

Yes. We meet after staff meetings.

Don't know if he does, but I bet he is willing.

Yes. Whenever we have free time we can work on our computer/technology information.

Yes. Common planning time available daily as needed.

Yes. Somewhat, no planned time.

Yes. Principal believes strongly in technology.

No.

Yes. Professional day.

No.

Yes. Planning time for the teachers.

Yes. Staff meetings.

Yes. Common planning time with team teachers.

Yes. Common planning time with core teachers for the 2007-08 year.

Yes. Grade level meetings, we meet during our free time.

No.

Yes. During and after our staff meetings.

Yes. We have common planning times.

Yes. We get together and work together.

Yes. Common planning time.

Yes. Team meetings.

Yes. During team meetings.

No.

No.

Yes. If you have a common planning time period, with the particular technology
otherwise on our own time.

Yes. Before the school day.

No. Our schedules do not permit us time to collaborate since we do not have planning.

I don't know.

No.

No. We learn by ourselves.

Yes. We have professional days.

No. Schedules are not that we have planning time with our team teachers.

Yes. Time is given to us to attend workshops.

Yes. Sometimes after staff meetings.

No.

No. Anything we do is done on our time.

N/A

Yes. At in-services and staff meetings.

N/A

Yes. During in-services.

Yes. During our in-services throughout the year.

Yes. Our principal will do anything to help us.

Yes. If a teacher expressed need in this area, I believe an effort would be made to get
them the help they need.

Yes. Team teachers have planning time together.

Yes. During our common planning time.

Yes. Team meetings throughout the year.

Yes. We have team meetings.

Yes. After school and via email.

No. Not really.

No. We have limited time for networking. Usually our initial or final meetings deal with this.

No.

No. My fellow teachers and I meet, usually at planning period times for computer tech.

Yes. I have planning days with other teachers. We try to integrate technology into our lessons during this time.

No. Not lately, probably because of time and funding.

No.

Yes. Before school with morning meetings with technology instructor.

Yes. Weekly departmental meetings.

No. I'm sure she would if we had the equipment.

Yes. We have departmental meetings.

Yes. At in-services.

Yes and No. She is very open to suggestions however the BUDGET is limiting.

No. Not really but willing if time was allocated.

Yes. I think so.

No. None.

Yes. We have a schedule of meetings to collaborate together.

No. Nothing.

N/A

No. Although this year I had a class during 2nd period the other 7th grade teachers had period during which they could network if desired.

No. Not that I am aware of .

No. Our principal allows it, but it is mostly left up to individual teachers since we do not have official meeting time.

Yes.

No.

Yes. After school. Our principal has scheduled a common planning period during which networking with other teachers can take place.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

No.

Yes. At the annual technology in-service.

Yes. During in-service times.

No. We have little free time to spend integrating technology.