

2008

Teacher's perceptions regarding their preparation for using computers in the classroom

Suzann Gail Smart Erickson
University of Dayton

Follow this and additional works at: https://ecommons.udayton.edu/graduate_theses

Recommended Citation

Erickson, Suzann Gail Smart, "Teacher's perceptions regarding their preparation for using computers in the classroom" (2008). *Graduate Theses and Dissertations*. 2545.
https://ecommons.udayton.edu/graduate_theses/2545

This Thesis is brought to you for free and open access by the Theses and Dissertations at eCommons. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of eCommons. For more information, please contact mschlangen1@udayton.edu, ecommons@udayton.edu.

TEACHER'S PERCEPTIONS REGARDING THEIR PREPARATION FOR USING
COMPUTERS IN THE CLASSROOM

Thesis

Submitted to

The School of Education and Allied Professionals of the
UNIVERSITY OF DAYTON

in Partial Fulfillment for the Requirements for

The Degree

Education Specialist in School Psychology

by

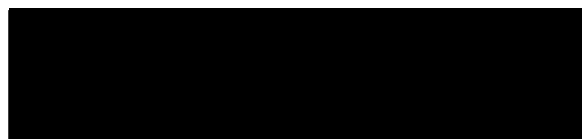
Suzann Gail Smart Erickson

UNIVERSITY OF DAYTON

Dayton, Ohio

June, 2008

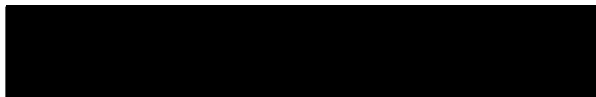
APPROVED BY:



Sawyer Hunley
Committee Chair



James H. Evans
Committee Member



Judith Oberlander
Committee Member

ABSTRACT

TEACHER'S PERCEPTIONS REGARDING THEIR PREPARATION FOR USING COMPUTERS IN THE CLASSROOM

Name: Suzann Gail Smart Erickson
University of Dayton

Advisor: Dr. Sawyer Hunley

The purpose of this descriptive research study was to investigate the degree to which recent graduates indicated that they were prepared to teach with technology in their teacher preparation program at the University of Dayton, Dayton Ohio. This study was conducted to determine if the significant findings found by Franklin (2005) at Boise State University's teacher preparation program could be replicated at the University of Dayton. The study was be descriptive in nature, and consisted of a survey mailed to graduates of the University of Dayton's Department of Teacher Education from the past two years.

TABLE OF CONTENTS

Chapter

I.	Introduction and Literature Review.....	1
II.	Methods.....	13
III.	Discussion.....	17
IV.	References.....	18
V.	Appendices.....	21
VI.	Table.....	24

Introduction/Literature Review

Summary

Computer technology is available in almost all the schools in our country. Its use has increased rapidly within the past few years, and it is imperative that today's teachers not only be prepared to use this technology, but to utilize it within their classrooms. The purpose of this study was to examine the degree to which recent graduates of one teacher preparation program felt they were prepared to utilize computer technology in their classroom.

Prevalence of Computer Technology in Schools

The vast majority of the students in today's schools are using computers according to the National Center for Education Statistics (NCES) (DeBell & Chapman, 2006). Sixty-six percent of nursery school students were reportedly using computers, and the percentage increases to 97% by Grade 12, with a mean of 91% across all grade levels. The study also showed that twenty-three percent of nursery school students are using the internet, and this percentage increases to 79% by grade 12, with a mean of 59% across all grade levels (DeBell & Chapman, 2006).

It is not surprising to learn that more students have access to computers in their schools than they do at home. The use of computers in schools has helped to bridge what DeBell and Chapman (2006) call the "digital divide". The digital divide refers to the gap between students who have access and the ability to use computers and those who do not.

The Internet is also an important part of today's educational experience. Internet use in public schools has increased from 35% of schools in 1994 to 99% of schools in 2002, with 92% of the schools having Internet in the actual classrooms (Kleiner & Lewis,

2003). Another significant figure is that the ratio of students to computers with Internet access was 4.8 to 1 in 2002 (Kleiner & Lewis, 2003). In this same NCES study of 1,206 public schools, among the schools with Internet access, 86% had their own web site, 29% of those were formally maintained by a teacher or other staff member, and 18% were maintained by teacher or other staff volunteers (Kleiner & Lewis, 2003).

Computer Technology and its Instructional Purposes

Today's teachers are using computers in their classrooms for seven main purposes: drill-and-practice, tutorial, problem solving, simulation, inquiry, testing, and programming (Varank, Tozoglu, & Demirbilek, 2001). DeBell and Chapman (2006) report that students use computers mostly for school assignments and word processing, as well as games, e-mail, and the Internet. Although the main purpose of computers in schools remains schoolwork, the way that students use computers to complete schoolwork has changed and expanded in the past few years.

Franklin (2005) reported that students primarily use computers for general software applications, complex multimedia and communication tasks, and practice/simulations. Nearly 75% of the teachers surveyed used computers primarily for locating and gathering materials, communication, posting information, and writing lessons.

Ruberg, Scales, and Nespor (1993) examined students' use of technology in elementary schools through observations, teacher interviews, and surveys. The study found that teachers historically used computers for drill and practice, simulations, and word processing. These activities were conducted individually or in small groups. No teachers used computers for larger group or classwide instruction. Most of the teachers

selected this material from what was already on hand at their school, which indicated that although teachers were willing to use computers in their classes they will not often go to outside resources to find different programs, software, or ideas. These findings demonstrate why it was important to have ample resources, professionals, and training available to teachers in today's schools, as well as why teacher trainees needed to be well versed in computer technology.

Akyurekoglu (2000) examined the use of computers among middle-school teachers. The study investigated teachers' perceptions regarding the use of computer applications for teaching. Three participants were interviewed for 45 minutes, and their opinions showed some common themes. The teachers mainly felt that computers were a teaching tool and a research tool for students. They also perceived computers as tools in classroom management for tasks such as keeping track of students' grades and work, as well as communication tools for e-mail (Akyurekoglu, 2000).

When asked which technology teachers judged to be essential for teaching, 68% reported that a teacher's computer station with email access was essential, 61% responded that Internet access was essential, 49% replied that at least one computer for every four students in the classroom was essential, 35% identified presentation software, and 21% reported valuing multimedia authoring programs (Lanahan & Boysen, 2005).

Teacher Preparation Programs

A study by Franklin (2005) suggested that there was a significant relationship between the degree to which graduates indicated that they were prepared to teach with technology in their teacher preparation program and their current use of computers.

Wilkerson (2003) suggested that teacher preparation programs utilize a triad model to

integrate technology. The first aspect of the triad is communication, which involves contact through technology between teacher trainees and instructors. The second aspect of the triad is productivity, while the third aspect is research and instruction. All three components should overlap and connect to one another (Wilkerson, 2003).

Brzycki and Dudt (2005) documented changes to the teacher preparation programs at Indiana, Clarion, and Edinboro Universities in Pennsylvania. These changes were made possible through a PT3 (Preparing Tomorrow's Teachers to use Technology) grant over a three year period, with goals that can be implemented in other teacher preparation programs. Some of the goals of the project were to establish instructional technology more deeply into the teacher education curriculum in both education courses and selected majors, in observations and field experiences, and to provide technological support (Brzycki & Dudt, 2005). They also found that lack of time, support, and models, as well as poor infrastructure (lack of hardware and software) and the tradition of only teaching technology in technology classes were barriers that needed to be overcome with this project.

The teacher preparation program at Texas Southern University redesigned its program with one of the goals as incorporating technology into all levels of teacher preparation so that teachers will be able to model technology in their classrooms (Lara & Malveaux, 2002). Technology was incorporated into teaching and learning, contextual teaching and learning in a learner-centered environment, field-based experiences, action research, problem-based learning, mentor support, and the induction period (Lara & Malveaux, 2002). The changes were welcomed by the teacher preparation students, one

of whom stated that a benefit was the familiarization of computer technology that was gained by the students (Lara & Malveaux, 2002).

One method of measuring classroom use of technology is with the Levels of Technology Implementation (LoTi), which was developed by Dr. Christopher Moersch. Using questionnaires, schools can determine at which of the seven levels of technology their teachers are utilizing technology. The questionnaires, called Determining Educational Technology And Instructional Literacy Skillsets (DETAILS) Framework, measure classroom teachers' Level of Technology Implementation (LoTi), Personal Computer Use (PCU), and Current Instructional Practices (CIP) (National Business Education Alliance, 2006). The levels range from Level 0, in which there is no use of technology, to Level 6 in which there is a student centered emphasis and a focus on using technology for higher order skills and real world applications (Moersch, 1995).

National Educational Technology Standards for Teachers (NETS-T)

The International Society for Technology in Education (ISTE) has developed a set of standards for teachers in using technology, the NETS-T. Because these standards are set for teachers, preservice teachers should be competent in the standards by the end of their certification process. The questionnaire for this study is based on these six standards. The standards include the following six categories (ISTE NETS, 2005): (1) technology operations and concepts, (2) planning and designing learning environments and experiences, (3) teaching, learning, and the curriculum, (4) assessment and evaluation, (5) productivity and professional practice, (6) social, ethical, legal, and human issues.

Other Implications: Factors Affecting Teachers' Use of Computers

Although the data on this topic are scarce, some research has examined the factors affecting teachers' use of computers in the classroom. A study by Myhre (1998) explored the notion that teachers may base their use of computers in the classroom on their view of the subject matter they teach. Myhre (1998) completed a case study of a math and science teacher, concentrating on what influenced this teacher to use computers in the classroom as well as how the teacher's knowledge of her subject matter affected her use of computers. Myhre (1998) found that the teacher saw math as a series of rules and processes, and therefore used computers to give the students drill-and-practice exercises. These exercises allowed the students to attempt problems without teacher intervention, to look at problems differently, and to help the students visualize the steps and facts while working independently.

Although the Myhre (1998) study postulated that teachers use computers based on how they process the procedures of their subject, most researchers concentrate on other factors. One study focused specifically on elementary teachers' experiences with, and the factors related to, using computers as instructional aids (Guha, 2000a). Guha's (2000a) study was conducted in 15 randomly selected elementary schools in New York using a close-ended questionnaire. The dependent variable was the degree of computer usage. The independent variables were teachers' experience and interest in computers, teachers' perceptions of their computer training and knowledge, teachers' comfort level using computers, gender, and teaching experience.

Guha's (2000a) study found that there is a direct positive relationship between computer usage and teaching experience and interest in computers, between computer usage and computer training and knowledge, and between computer usage and comfort

level using computers (Guha, 2000a). It also found that there is no difference in computer usage attributable to the teachers' gender or levels of teaching experience. Teachers surveyed also responded that computers help improve student performance, individualize instruction, and increase student motivation. Further findings of this study indicate that teachers are relatively comfortable using computers, but that not all teachers are willing to make use of computer training opportunities when the districts make them available. The results of this study suggest that teacher education programs must prepare education professionals for future technological requirements.

Teachers' perspectives regarding their discomfort in using computers in their classrooms was examined in a follow-up study by Guha (2000b). Ten teachers were interviewed, five of whom reported being "more comfortable" using computers for classroom instruction and five of whom identified themselves as "less comfortable". Regardless of the teachers' scores, all of the teachers judged it important to incorporate computers into their instruction. When asked about the problems with using computers in their classrooms, both groups stated that the number of computers in their classroom and the lack of up to date computers were concerns. However, another study contradicted this finding, and showed that a majority of the teachers (57%) thought that computers and other technologies were sufficiently available (Kleiner & Lewis, 2003). This finding was supported by a more recent study supported by the National Center for Education Statistics (NCES) that found a majority of teachers judged that the amount of technologies in schools was sufficient (DeBell & Chapman, 2006).

The less comfortable group also mentioned problems with time management and emphasized a lack of computer training (Guha, 2000b). Though most of the teachers

interviewed found that their teaching practices have changed as a result of using computers, the teachers in the more comfortable group were having their students use computers in more sophisticated ways, such as multimedia projects, while the teachers in the less comfortable group were more likely to utilize the word processing aspect of the computers.

Most teachers in the Guha (2000b) study, regardless of group, reported that they should be allowed more training and time to practice using the computer to become more comfortable using computers in their instruction. The “more comfortable” group wanted to be up to date and learn about the Internet and web pages, while the “less comfortable” group wanted more instruction on basic applications, as well as a mentor from their faculty to help them learn the applications.

In a significant study mentioned previously, recent graduates of the Boise State University elementary education program were surveyed to determine how they use computers in their curriculum and what factors influence that use of computers (Franklin, 2005). As in the McGrail (2005) study, Franklin (2005) examined barriers to the integration of computers into the curriculum. The three greatest of these barriers were too much curriculum to cover, lack of time in their daily schedule, and high stakes testing. Franklin (2005) found that there was no significant relationship between computer use by graduates and support from leadership, time, and access and availability of computers.

It is important to not only look at the advantages of using computers, but the disadvantages as well. It is only by looking at the concerns and difficulties that teachers have faced in using computers that guidelines can be established for the appropriate use of computers in the classroom. McGrail (2005) examined the perspectives of English

teachers on technology integration in their classrooms. McGrail (2005) utilized a case study design with in depth interview methodology among seven teachers. One area of concern expressed during the interview was that although computer technology is fun and different, the teachers have not changed their basic teaching styles. For example, the PowerPoint program replaced the blackboard or overhead projector. Although this changes the mode of presentation, it has not improved the basic methodology. Another concern was that with the new abbreviations and slang of instant messages and e-mail, the students can become out of practice in using formal writing skills that are needed. Also, because students are not all at the same level of competence with computer skills, it is necessary to start with basic skills and work up to advanced skills. This can be difficult for teachers who do not feel advanced enough in their own computer skills to help their students become competent.

Logistical concerns were also identified, not only within the computer lab itself, but also within the school. When the teacher is the only person available to help the students with computer problems it can hinder the students' abilities to work independently while waiting for the teacher to help them. On a school-wide level, it can be difficult to schedule computer time for a class for a lengthy period of time, the computer lab could be overbooked, and it could just be easier to stay in the regular classroom (McGrail, 2005).

Teachers also expressed concerns about administration and technology specialists forcing technology on the teachers. The teachers judged that the administration was disregarding their needs, and the technology specialists should not be consulted on issues regarding the teachers' competence and curriculum. Although the teachers in the McGrail

(2005) study were open and willing to use technology in their curriculum for the benefit of their students, they were not willing to use computers for the sole purpose of using computers (McGrail, 2005).

Technology Integration in Teacher Preparation Programs

A relevant topic in teacher preparation programs is the attitudes of preservice teachers towards technology. A study by Friedman and Kajder (2006) examined preservice teachers' attitudes towards technology using anonymous feedback. The study found that preservice teachers wanted to use technology in their classrooms, but did not know how and never had any experience with teachers modeling effective uses of technology. The preservice teachers also wanted a direct connection between the technology in their college courses and the subjects they would be teaching, as well as this technology being current and accessible.

It is also important to know the level of technological competency of students entering teacher education programs. Bannister and Ross (2005), using an Assessment of Technology Competencies (ATC), looked at the relationship between preservice teachers' experience using technology in high school and their skill with technology. Surprisingly, 32% of the students perceived themselves as having strong technology skills but actually scored low on the ATC, and 10% of the students perceived their skills to be weak yet scored high on the ATC. Bannister and Ross (2005) hypothesized that the students' beliefs in their skills were faulty because they based their beliefs on time spent on basic tasks such as word processing and Internet use.

Wright and Wilson (2005) studied if preservice social studies teachers applied the technological skills they learned in their methods classes, through the development of

their electronic portfolios, within their student teaching and first year of teaching. Data collected through survey showed that of the eight student teachers who responded, five or more used the resources they had learned, with PowerPoint being the most common, and only two using Web page development. All responders were encouraged to use technology by their classroom teacher.

While there are important changes in the technology being used by preservice teachers, it is also important to examine how the instructors in these programs are adapting to this change. Vermillion, Young, and Hannafin (2007) completed a study examining the opinions of ten instructors of core courses on course instruction, student learning, and ATI, the Academic Technology Initiative which required that all juniors in the program purchase a notebook computer. The study found that while the laptops supported new uses of technology, they did not in and of themselves fuel any change in teaching strategies, and some instructors did not even utilize them during class. Some positive effects noticed was that there was more communication between the instructors and the students and note taking was made easier through uploading notes to the Internet.

Some issues that emerged in the study (Vermillion, Young, & Hannafin, 2007) were that it was difficult to access the Internet with large numbers of students, and there were expectations for the students to use computers during classes, but not in their clinical placements. There were also concerns over the risk of class distractions due to computers, and PowerPoint making the class format more boring and lecture focused. Some instructors were also frustrated that no one had helped them to learn how to use the computers for instructional purposes, and they were instead just told to use them.

Summary

The purpose of this study was to examine the degree to which recent graduates of the Teacher Education Department of the University of Dayton teacher preparation program felt they were prepared to utilize computer technology in their classroom. Because computers are increasingly prevalent in the classroom it is important to gauge how teachers are using this technology. Understanding teachers' perceptions of their preparation in classroom computer usage is important to inform professional development programs for teachers who are seeking to increase their use of computers as an instructional technology. The results from this study will be beneficial for teacher education programs, particularly University of Dayton programs who wish to ensure that technology-based learning initiatives meet the professional training needs of their students.

Methods

Purpose

The purpose of this study was to investigate the degree to which recent graduates indicated that they were prepared in their teacher preparation program at the Teacher Education Department of the University of Dayton to teach with technology.

Setting and Participants

The target population for this study was graduates of the Early Childhood (pre-K-3), Middle Childhood (4-9), and Adolescence to Young Adult (7-12) programs at the University of Dayton from the past two years (2005 and 2006). This population was selected to help determine the degree to which the graduates felt their undergraduate program prepared them to use computers in their classrooms. The survey participants must have been employed as teachers in the United States at the time of the study. Participant contact information was obtained from the University of Dayton's Department of Teacher Education and Allied Professions.

The participants were contacted by U.S. mail. A letter of informed consent accompanied the questionnaire. The letter of informed consent included a statement informing the participants that their information would be kept confidential and available only to the researcher, as well as a statement explaining that their participation was voluntary (see Appendix A).

Surveys were mailed out to the 152 graduates of the University of Dayton's Teacher Education Program from the years 2005 and 2006. The survey response rate was 26% (39 surveys returned). Of those surveys, 28 were used in the analysis of the data, as 11 were returned by people not teaching at that time. Of the respondents who were

employed as teachers at the time of the study, eight taught early childhood classes and graduated in 2006, one taught middle childhood classes and graduated in 2005, seven taught middle childhood and graduated in 2006, one taught adolescence to young adult and graduated in 2005, and 11 taught adolescence to young adult and graduated in 2006.

Procedure

For this project the participants were administered a questionnaire by mail. The questionnaire consisted of six items with a 4-point categorical rating scale structure (see Appendix B). A score of 1 indicated no effect on their preparedness, while a score of 4 indicated a large effect on their preparedness. There were also three general information questions and two open-ended questions. The questionnaire used in this study was adapted from the one utilized by Franklin (2005) at Boise State University's teacher preparation program.

Research Design and Data Analysis

Descriptive statistics were used to summarize the data obtained from the questionnaires. Classification variables for this study included the graduation year (2005 or 2006), and the program of study (Early Childhood, Middle Childhood, Adolescent to Young Adult). Specifically, means and standard deviations were calculated for each of the categorical rating scale items. Content analysis was used to identify major themes emerging from the responses to the open-ended question.

Results

The overall results of the study indicated that the University of Dayton's Teacher Education program has some impact on teachers' use of computers in their classrooms.

The means of the responses for all but one outlying question (question #16, $M=3.18$, $SD=0.81$) were very similar, ranging from 2.18 to 2.61 (SD from .63 to 1.13), which is a rating between a small to a moderate extent.

Although each question asked about one specific area of technology, they were also grouped to determine any specific trends in the answers given. Group 1 (Table 1) (questions 4-6) assessed the extent to which the Teacher Education program at UD helped students to develop technological concepts, skills, and knowledge. This group included the three related questions and revealed a small to moderate impact, with mean scores from 2.48 to 2.64.

The second grouping (questions 7-8) (Table 1) indicated the extent to which the Teacher Education program prepared future teachers to incorporate technology into their teaching. Mean scores from 2.43 to 2.54 indicated a small to moderate impact.

The third grouping (questions 9-10) (Table 1) indicated the extent to which the Teacher Education program addressed content standards and student centered strategies. Again the results in Table 1 reveal a small to moderate effect.

The fourth grouping (questions 11-13) (Table 1) assessed the extent to which the Teacher Education program prepared students to determine the appropriate use for learning. Questions eleven and twelve appear to follow the trend of the survey with respondents answering that the Teacher Education program prepared them to assess and analyze student use of technology from a small to moderate extent. However, question thirteen's scores indicate that the program did not prepare future teachers to discriminate the appropriate use of technology in the classroom as thoroughly.

The fifth grouping (questions 14-16) (Table 1) indicated the level of preparation in using technology for professional development, productivity, and communication outside of class. This study revealed that the University of Dayton's Teacher Education program was somewhat inconsistent this area. Respondents answered that the program prepared them well to use technology to communicate, but they were not as well prepared to use technology to evaluate professional practice and increase productivity.

The impact of the Teacher Education program on using technology ethically, safely, and to empower learners was judged in the final grouping (questions 17-18). Data in Table 1 suggested a small to moderate impact.

The qualitative question on the survey asked for suggestions to help improve the teacher preparation program. The most common theme (64% of the returned surveys) was that the students should be offered a specific technology in education class, or to provide more opportunity for the use of relevant technology (e.g., Smartboard) in the required courses. One respondent stated that everything they knew, they learned on their own. Some specific negative comments included: "I received very little technology training," "Few of the faculty were proficient in SMART Board use," "This aspect was one of the disappointments I had regarding technology at UD." On the other hand, one alumnus responded that "From my experience at Dayton I have become the 'go to' person in my building when it comes to technology."

Some of the most valuable comments were the suggestions for the future of the program, which included: "Devote a whole class to it," "More exposure to online grade books, less emphasis on PowerPoint," and "Teach more ways to collect student data."

Discussion

The results of the survey imply that, although participants feel that the school helped prepare them to use computers in their classroom to some extent, there is still room for improvement. Results of this study reveal that areas in which the University of Dayton Teacher preparation program could be modified could be to offer a specific educational technology class, or to increase the emphasis in classroom specific technologies in the current classes. Items that the respondents feel they needed more training included the SMART Board, online or computerized report card software, and the collection and analysis of student data. One item that the respondents felt they were well trained on was the use of PowerPoint, which they felt was overemphasized in their training program.

Limitations

There were several limitations to this study. First, numerous surveys were returned to the sender from the post office. Therefore, these alumni did not have the opportunity to participate in the survey, which could have changed the results of the study. Second, the study did not include graduates of the Teacher Education Program who are currently employed as Intervention Specialists or in other teaching positions, such as in higher education. As other positions could have varying opportunities to utilize any technological knowledge gained through University of Dayton's program, the respondents' answers could have had an impact on the results of the study. Lastly, with a final usable response rate of 18%, the relatively small number of returned surveys could have had an impact on the generalizability of the study results to other Teacher Education alumni.

References

- Akyurekoglu, H. (2000). Perceptions of teachers at Miami Shores/Barry University (MSBU) Charter School using computers in their classrooms for teaching. In *Society for Information Technology & Teacher Education international conference: Proceedings of SITE 2000* (Volumes 1-3). San Diego, CA.
- Bannister, S., & Ross, C. (2005). From high school to college: How prepared are teacher candidates for technology integration? *Journal of Computing in Teacher Education*, 22(2), 75-80.
- Brzycki, D., & Dudt, K. (2005). Overcoming barriers to technology use in teacher preparation programs. *Journal of Technology and Teacher Education*, 13(4), 619-641.
- DeBell, M., & Chapman, C. (2006). *Computer and Internet use by students in 2003* (NCES 2006-065). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Franklin, C.A. (2005). Factors that influence elementary teachers' use of computers. *Journal of Technology and Teacher Education*, (15)2, 267-293.
- Friedman, A., & Kajder, S. (2006). Perceptions of beginning teacher education students regarding educational technology. *Journal of Computing in Teacher Education*, 22(4), 147-151.
- Guha, S. (2000a). *A comparative analysis of present and preferred situations of elementary grade teachers in using computers for classroom instruction*. Temple University: Pennsylvania.

Guha, S. (2000b). *Are we all technically prepared? Teachers' perspectives on the causes of comfort or discomfort in using computers at elementary grade teaching*. Paper presented at the annual meeting of the National Association for the Education of Young Children, Atlanta, GA.

ISTE NETS Project (2005). ISTE National Education Technology Standards Projects.

Retrieved May 18, 2007, from <http://cnets.iste.org/teachers/index.shtml>.

Kleiner A., & Lewis, L. (2003). *Internet access in U.S. public schools and classrooms: 1994-2000*, (NCES 2004-011). U.S. Department of Education, Washington, DC: National Center for Education Statistics.

Lanahan, L., & Boysen, J. (2005). *Computer technology in the public school classroom: Teacher perspectives* (NCES 2005-083). U.S. Department of Education, Washington, DC: National Center for Education Statistics.

Lara, M., & Malveaux, L. R. (2002). Redesigning teacher preparation: A collaborative initiative for quality education. In *An imperfect world: Resonance from the nation's violence. 2002 Monograph series, Proceedings of the Annual Meeting of the National Association of African American Studies, the National Association of Hispanic and Latino Studies, the National Association of Native American Studies, and the International Association of Asian Studies*.

Myhre, O. R. (1998). I think this will keep them busy: Computers in a teacher's thought and practice. *Journal of Technology and Teacher Education*, 6(2-3), 93-103.

McGrail, E. (2005). Teachers, technology, and change: English teachers' perspectives. *Journal of Technology and Teacher Education*, 13(1), 5-24.

- Moersch, C. (1995). Levels of Technology Implementation (LoTi): A framework for measuring classroom technology use. *Learning and Leading With Technology* (23)3, 40-2.
- National Business Education Alliance (2006). The LoTi Connection. Retrieved May 18, 2007 from <http://www.loticonnection.com/index.html>.
- Ruberg, L., Scales, G.R., & Nespor, J. (1993). The impact of digital technologies on the elementary school classroom. In *Visual Literacy in the digital age: Selected readings from the annual conference of the International Visual Literacy Association* (pp. 151-6). Blacksburg, VA: Virginia Tech College of Education, Curriculum & Instruction.
- Varank, I., Tozoglu, D., & Demirbilek, M. (2001). Issues in integrating computers into classroom. In *Annual proceedings of selected research and development [and] practice papers presented at the National Convention of the Association for Educational Communications and Technology: Vol. 1-2*.
- Vermillion, J., Young, M., & Hannafin, R. (2007). An academic technology initiative for teacher preparation candidates: Implications for preservice teacher programs. *Journal of Computing in Teacher Education*, 23(3), 99-103.
- Wilkerson, T. L. (2003). A triad model for preparing preservice teachers for the integration of technology in teaching and learning. *Action in Teacher Education*, 24(4), 27-32.
- Wright, V. A., & Wilson, E. K. (2005). From preservice to inservice teaching: A study of technology integration. *Journal of Computing in Teacher Education*, 22(2), 49-55.

Appendix A

Letter of Informed Consent

Dear Recent University of Dayton Teacher Preparation Program Graduate:

You are being asked to participate in a research study. The purpose of this study is to investigate the degree to which recent graduates indicated that they were prepared to teach with technology in their teacher preparation program at the University of Dayton, Dayton Ohio.

As a participant in this study, you are asked to complete of a brief survey which should take approximately five minutes.

All responses will remain anonymous and confidential.

There are no foreseeable risks or discomforts associated with this study. The benefits of this study are that you will be helping to determine whether the University of Dayton's teacher education program sufficiently prepares their graduates to use computer technology in their classrooms. You will also be helping a Specialist Degree candidate fulfill the requirements for the conferment of the degree, as well as gaining knowledge of how psychological research is performed.

Your participation is voluntary. You can choose not to participate without penalty. Should you choose to participate please complete the enclosed survey and return it in the pre-addressed, stamped envelope. You can discontinue your participation at any time. Questions about the rights of the participant should be addressed to Jon Nieberding, Ph.D., Chair of the Committee for the Protection of Human Subjects, St. Joseph Hall Room 312, University of Dayton, Dayton, OH 45469-1430, 937-229-2171. Specific questions about the study should be address to Dr. Sawyer Hunley, Program Advisor, Chaminade Hall Room 301, University of Dayton, Dayton, OH 45469-1430, 937-229-3624.

Sincerely,

Suzann Erickson

Please place a check (✓) on the line below and provide your signature.

_____ I have read this letter and I consent to participate in this research study.

Participant's Signature: _____ Date: _____

Appendix B

Teachers' Perceptions Regarding Computers in the Classroom**Please Return by December 21, 2007****General Information (please circle)**

1) What year did you graduate from the University of Dayton?

2005 2006

2) What program did you complete?

Early Childhood (pk-3) Middle Childhood (4-9) Adolescence to Young Adult (7-12)

3) What grade do you currently teach? (circle all that apply)

Pre-K Kindergarten 1 2 3 4 5 6 7 8 9 10 11 12

Other (please specify) Not currently teaching

Please continue only if you are currently a classroom teacher. If you are not currently a classroom teacher, please return this survey with questions 1-3 answered only. Thank you for your help.

In your opinion, to what extent did your teacher preparation program at UD prepare you in the following areas to use computers in your classroom?

	Not at all	Small extent	Moderate extent	Large extent
4) Knowledge and understanding of technological concepts.....	1	2	3	4
5) Skills with technology.....	1	2	3	4
6) Continual growth in current technological knowledge.....	1	2	3	4
7) Planning and designing effective learning environments and experiences supported by technology.....	1	2	3	4
8) Integrating current research on teaching with technology.....	1	2	3	4
9) Use technology to address content standards and student technology standards.....	1	2	3	4
10) Use technology to address learner-centered strategies and creativity.....	1	2	3	4

	Not at all	Small extent	Moderate extent	Large extent
11) Use technology to assess student learning.....	1	2	3	4
12) Use technology to collect and analyze data.....	1	2	3	4
13) Use technology to determine students' appropriate use of technology for learning.....	1	2	3	4
14) Use technology for professional development.....	1	2	3	4
15) Use technology to evaluate professional practice, increase productivity.....	1	2	3	4
16) Use technology to communicate with peers, parents, and the community.....	1	2	3	4
17) Teach ethical and safe technology use.....	1	2	3	4
18) Use technology to empower learners with diverse backgrounds and affirm diversity and make access available to all students.....	1	2	3	4

19) As a classroom teacher, have you integrated technology into your lessons that were the same as or similar to integrated lessons that you developed while at the School of Education and Allied Professionals? **Yes No**

If yes, how many lessons?

20) As a classroom teacher, what suggestions do you have for the University of Dayton School of Education teacher preparation program concerning teaching with technology?

Thank you for completing the survey. Please return it in the self-addressed, stamped envelope.

R002593911

Table 1

Averages and Standard Deviations for Survey Questions

Question	Mean	Standard Deviation
4) Knowledge and understanding of technological concepts	2.64	0.73
5) Skills with technology	2.54	0.64
6) Continual growth in current technological knowledge	2.48	0.75
7) Planning and designing effective learning environments and experiences supported by technology	2.54	0.79
8) Integrating current research on teaching with technology	2.43	0.92
9) Use technology to address content standards and student technology standards	2.50	0.88
10) Use technology to address learner-centered strategies and creativity	2.61	0.83
11) Use technology to assess student learning	2.50	0.96
12) Use technology to collect and analyze data	2.50	0.88
13) Use technology to determine students' appropriate use of technology for learning	2.18	0.90
14) Use technology for professional development	2.61	1.10
15) Use technology to evaluate professional practice, increase productivity	2.39	0.96
16) Use technology to communicate with peers, parents, and the community	3.18	0.81
17) Teach ethical and safe technology use	2.61	1.13
18) Use technology to empower learners with diverse backgrounds and affirm diversity and make access available to all students	2.39	0.83