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Secondary world history teachers' integration of technology into the classroom: A mixed-method approach

Shelli A. Whitworth
University of South Florida

Secondary World History Teachers' Integration of Technology into The Classroom: A Mixed-Method Approach

by

Shelli A. Whitworth

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Co-Major Professor: Michael J. Berson, Ph.D.
Co-Major Professor: J. Howard Johnston, Ph.D.
John Ferron, Ph.D.
James A. White, Ph.D.

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ABSTRACT

In the social studies classroom, using technology, students may gain access to expansive knowledge, broaden their exposure to diverse people and perspectives, and engage in critical thinking activities necessary for citizenship education (Berson, 1996; Berson & Balyta, 2004; Berson & Berson, 2003; Bolick, McGlinn, & Siko, 2005; NCSS, 1994, 2006; Risinger, 1996; Whitworth & Berson, 2003). 21st Century Skills are valuable for students as they examine vast amounts of content relating to historical events, figures, societies, technological growth and examine the relationship of the content to today's global interactions. Research indicates that there remains a call for documentation of exemplary uses beyond that of research and basic presentation tools (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Kopkowski, 2006; NCSS, 2006; NEA, 2004; Technology Counts, 2006; U.S. Department of Education, 2004, 2005; Whitworth & Berson, 2003). The continued need for research in the field should address the intersection of content, current effective technology practice, and pedagogy of innovative uses of technology in the classroom while offering a model or steps for use (Berson, 1996; Berson & Balyta, 2004; Berson, Lee, & Stuckart, 2001; Bolick, McGlinn, & Siko, 2005; Braun, 2002; Bull et al., 2007; CUFA Opening

Session, 2005; Diem, 2000; Doolittle & Hicks, 2003; McGlinn, 2007; Mishra & Koehler, 2006; NCSS, 2006; Shulman, 1986; Whitworth & Berson, 2003).

This study examined the types of technology being used in secondary World History classes and how they are being integrated. The study utilized a mixed-method approach using a survey instrument, Perceptions of Computers and Technology, designed to measure the types of software and integration of technology use in classrooms. Written responses and follow-up of randomly selected cases served to provide complementary data to elaborate and clarify results from the quantitative portions of the analysis (Hogarty, Lang, & Kromrey, 2003; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003).

Chapter 1

Introduction to the Study

Introduction

In the 1990s – 2000s, tremendous amounts of funds, research, and national initiatives drove the purchasing of technology for schools and a rising concern for the expenses of technology (Cuban, 1994; Cuban 1999; Jones & Paolucci, 1998). However, in recent years, the widespread proliferation of technology use in society has shifted the focus from cost and access to technology to examining how technology is being used to afford students opportunities to develop skills necessary to be technology and information literate and successful in the 21st century (CEO Forum, 2000; ISTE, 2006; NCREL, 2003; U.S. Department of Education, 2005). Social studies content and teaching strategies that require higher order or critical thinking yield promising grounds for innovative uses of technology to develop 21st Century Skills. However, there is a need for research in the field that addresses effective practice and pedagogy of uses of technology in the classroom as linked to 21st Century Skills and the NCSS (2006) technology guidelines (Berson, 1996; Berson & Balyta, 2004; Berson, Lee & Stuckart, 2001; Bolick, McGlinn, & Siko, 2005; Braun, 2002; Diem, 2000; Doolittle & Hicks, 2003; NCSS, 2006; Whitworth & Berson, 2003).

Context of the Problem

A review of the literature in social studies and social studies education reveals that there is an emergence of examples of model uses of technology in classes consistent with 21st Century Skills highlighted in national standards. Articles and resources on incorporating the use of the World Wide Web into classrooms are most prevalent while indicators of uses of technology for communication, drill and practice, simulations, information databases, use of geographic information systems (GIS), and videoconferences and digital video are emerging (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Whitworth & Berson, 2003). This study serves to add to the empirical data and to guide social studies teachers in their efforts to infuse technology into their classes.

The study utilized a within-stage mixed method (simultaneous approach), which allowed the researcher to mix quantitative and qualitative research approaches during data collection phases and the data analysis stage (Johnson & Onwuegbuzie, 2004). The intermethod approach used in this study provided a concurrent-nested design through the administration of a survey that contained both closed-ended (quantitative) and open-ended questions (exploratory, qualitative; Tashakkori & Teddlie, 2003) to form triangulation of the data. The qualitative data provided complementary data to elaborate and clarify results from the quantitative portions of the analysis (Tashakkori & Teddlie, 2003).

Statement of the Problem

State and national initiatives have placed a tremendous emphasis on the use of technology in the classroom as a means to ensure that students develop

21st Century Skills necessary for a technology-based society (Florida Department of Education, 2000, 2002; International Society for Technology in Education; 2000; National Council for Accreditation of Teacher Education, 1997, 2000; U.S Department of Education, 1996). Critics claim there is little research offering evidence of effective methods of technology in teaching and learning yet agree that new skills for the 21st Century Skills are essential for students (Bitter, Garten, Oppenheimer, & Otto, 2004; Cuban, 1999; DeWitt & Horn, 2005; Jones & Paolucci, 1998). Recent trends indicate that social studies classrooms are using technology to enhance 21st Century Skills through Internet use, technology for communication, drill and practice, simulations, information databases, use of GIS, and videoconferences and digital video (Berson, 1996; Berson & Balyta, 2004; Berson & Berson, 2003, 2007; Bolick, McGlinn, & Siko, 2005; Lipscomb, Guenther, & McLeod, 2007; NCSS, 1994, 2006; Risinger, 1996; Vincent & van't Hooft, 2007; Whitworth & Berson, 2003). Yet, there remains a need for documented model uses of technology in social studies education and social studies teaching in order to diffuse technological innovations (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Kopkowski, 2006; McGlinn, 2007; NCSS, 2006; Rogers, 1995; Whitworth & Berson, 2003).

Purpose of the Study

The purpose of this study was to examine what types of technology are being used in secondary World History classes and how they are being integrated. This study served to add to the empirical data and to guide social studies teachers in the use of technology not only as a learning tool but to assist

and encourage other educators in their own endeavors to incorporate technology into the curriculum. Using the instrument, Perceptions of Computers and Technology (Appendix E), designed to measure both teachers' perceptions and use of technology in their classrooms, in combination with the qualitative inquiry of selected cases, the study utilized a mixed-method approach. Selected case studies served to provide complementary data to elaborate and clarify results from the quantitative portions of the analysis (Hogarty, Lang, & Kromrey, 2003; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003). Additionally, the study offers a review of technology standards and initiatives, 21st Century Skills, technology in the social studies, and diffusion of technological innovations.

Research Questions

The study addressed the following research questions:

1) What types of software, hardware, and/or Internet tools are being used by World History teachers? (Quantitative)

2) With what types of teaching methods are computers integrated in the classroom by World History teachers? (Quantitative)

3) How are lessons and activities conducted with computers by World History teachers? (Qualitative)

Definition of Terms

Digital-age literacy: 21st Century Skills necessary to be a productive citizen in today's world, with an emphasis on understanding information in a variety or forms. Digital-Age Literacy includes basic literacy, as well as scientific, economic, technological, visual, information, multicultural, and global literacy

(NCREL, 2003, p. 15; NCSS, 2004; SCORE, 2004). Closely linked to digital literacy is Cyberliteracy (Gurak, 2001). This is the need for critical thinking skills unique to interpreting Internet and electronic communication in the digital world (Gurak, 2001).

Technology literacy: According to enGauge 21st century skill, the knowledge about what technology is, how it works, what purpose it can serve, and how it can be used efficiently and effectively to achieve specific goals (NCREL, 2003, p. 22).

Technology infusion or integration: Meaningful computer use by teachers and students related to curriculum content areas (Eisenberg & Johnson, 1996). Additionally, technology use that supports the essential social studies skills as set forth by NCSS, NETS-S, and 21st century learning: acquiring information through "reading, study, reference and information search skills and technical skills unique to electronic devices and organizing and using information thinking, decision making skills" (ISTE, 2007; NCSS, 2004, 2006; Whitworth & Berson, 2003).

Resources

This study employed the survey instrument, Perceptions of Computers and Technology (Appendix E). The instrument was designed to measure teachers' perceptions and reported use of technology in their classrooms and was field tested and then administered in a district wide assessment that yielded 2,156 participants (Hogarty, Lang, & Kromrey, 2003). A small budget of $387.00

was necessary for copying the survey and for postage for return packets and for incentives (Appendix N).

Limitations

The proposed research design included potential threats to internal validity in both the qualitative and quantitative portions. Threats to internal validity might include the following: (a) *history*, because events out of control of the researcher may impact the use or cease the use of technology by participants; (b) *attrition*, however, for the follow-up case study data collection, every effort was made to reach participants to complete the follow-up data, including visiting them at their schools; and (c) r*esearcher bias*, as prepared scripts and written instructions were used when administering the survey materials to reduce researcher bias and so that the study could be easily replicated (Campbell & Stanley, 1963).

The following threats to external validity were considered: (a) *Population validity* relates to generalizing to the population from which the sample was drawn, and the findings from this study may not generalize to the entire population of World History teachers in this district as there may have been a bias or predisposition to technology use or concerns that prompted the sample population to participate, and (b) *researcher bias,* as noted above (Campbell & Stanley, 1963). Furthermore, to establish credibility in the proposed study, the researcher conducted peer reviews of qualitative responses to examine and reduce experimenter biases, assumptions, and logic regarding the interpretation and identification of themes in the qualitative data (Creswell, 1998; Maxwell, 1996; Tashakkori & Teddlie, 1998).

Organization of Remaining Chapters

The remaining chapters present a review of the existing research and literature and the proposed methodology. Chapter 2 details the research and literature including technology initiatives and standards, 21st Century Skills, technology in the social studies, and diffusion of technological innovations. Chapter 3 outlines the research methodology and procedures to be utilized in the proposed study. Chapter 4 presents the results of the study as they pertain to the posed research questions. Chapter 5 summarizes the study and discusses the implications of the findings. Recommendations of further research projects are also outlined.

Chapter 2

Review of the Related Literature

This study examined the types of technology being used in secondary World History classes and how they are integrated into learning and instruction. The study added to the empirical data and to guidelines for social studies teachers on integrating technology into the World History curriculum. This chapter reviews technology initiatives, standards, 21st Century Skills, technology in the social studies, and the diffusion of technological innovations into teaching and learning.

Technology Initiatives

The use of technology in classrooms has been advocated by the U.S. Congress in order to afford students opportunities to prepare them for the 21st century (U.S. Department of Education, 1996, 2000a, 2004, 2005). The 2000 National Educational Technology Plan included, as one of its goals, the emphasis on students gaining technology skills and information literacy skills or 21st century literacy to ensure appropriate and responsible use of technology in an increasingly technology-rich world (U.S. Department of Education, 2000a). The goals included information problem-solving skills, such as how to define tasks, identify information-seeking strategies, locate and access information, determine information's relevance, organize and communicate the results of the information problem-solving effort, and evaluate the effectiveness and efficiency

of the solution. In recent years, the federal government recognized the potential of technology in schools to enhance critical 21st Century Skills, resulting in an expanded national plan.

The 2004 National Educational Technology Plan included seven action steps to help districts prepare students for future success: (a) strengthen leadership by encouraging technology partners and a community relationship for planning technology goals; (b) consider innovative budgeting; (c) improve teacher training; (d) support E-learning and virtual schools by making these options available to all students and encourage faculty training in these areas; (e) encourage broadband access 24 hours a day, 7 days a week, and maintain the system for quality use; (f) move toward digital content in classroom; and (g) integrate data systems across schools within districts (U.S. Department of Education, 2004). National organizations and professional education organizations, as well as school districts, continue to develop initiatives, standards, and training to ensure the infusion of technology in the classroom as a means for students to develop 21st Century Skills.

In October 2000, the Florida Department of Education (FLDOE) approved the *Educational Technology Plan Framework for the State of Florida* (FLDOE, 2000). One of the goals within this plan was “to enhance the impact of technology on student performance” and that “all educators will master and model educational technology standards as established by the Department of Education” (p. 4). The revised October 2002 plan included the goal to “improve learning opportunities for students through the appropriate integration of

educational content delivery systems and instructional tools into the curriculum" (FLDOE, 2002, p. 1). One of the foci within this goal is to "establish educational technology standards for the certification of teachers," which would involve collaboration with "colleges of education to ensure that pre-service programs prepare teachers to meet the educational technology standards" (FLDOE, 2002, p. 5). Efforts to ensure that important 21st Century Skills are met have resulted in national technology standards and accreditation for teacher education programs, as shown in *The National Educational Technology Standards* (NETS) Project of the International Society for Technology in Education (ISTE, 2000).

Technology Standards

The NETS-T project provides "teacher education programs with standards describing what new teachers should know about and be able to do with technology upon entering the classroom" (ISTE, 2000; NETS-T, 2006). The NETS project with the National Council for Accreditation of Teacher Education (NCATE) and the International Society for Technology in Education (ISTE) developed NCATE-approved National Standards for Technology in Teacher Preparation and National Accreditation for programs in educational computing and technology teacher preparation (NCATE, 2000). The accreditation emphasizes that teacher education programs "provide adequate access to computers and other technologies, and expect faculty and students to be able to use it successfully" (NCATE, 2000, p. 1). Through Preparing Tomorrow's Teachers grants, resulting research served to create "national consensus on what teachers should know about and be able to do with technology activities"

(NETS-T, 2006). In their continual efforts to stay abreast of the latest technology and skills necessary within our society, at the 2007 annual National Educational Computing Conference, ISTE announced they will embark on a year-long process of revising and enhancing NETS-T.

Additionally, ISTE developed six standards for students in the classroom or NETS for Students (ISTE, 2006, 2007). These provide a framework for teachers when designing lessons and activities including 21st Century Skills. The cnets.iste.org website offers a comprehensive online hub to share NETS, by offering guidelines to teachers, students, and administrators on meaningful uses of technology, by sharing research, and by offering links to model practices across disciplines to assist in further diffusion of model innovations of technology use in education. In June, 2007 ISTE announced NETS Refresh. The standards for students outline necessary 21st Century Skills for life in an ever increasing, technology-based digital society.

21st Century Skills

The efforts of educators as well as federal, state, and private agencies to encourage use of technology in the classroom stems from an increasing need for students to possess the ability to think critically and make decisions about vast amounts of information accessible through technology. These are skills that are necessary as a 21st century student and a future active citizen. The six ISTE revised standards guide teachers in developing activities that afford students opportunities to learn life skills under the following six categories:

- Creativity and innovation
- Communication and collaboration

- Research and information fluency
- Critical thinking, problem-solving, and decision making
- Digital citizenship to understand human, cultural, and societal issues related to technology
- Learning technology operations and concepts (ISTE, 2007).

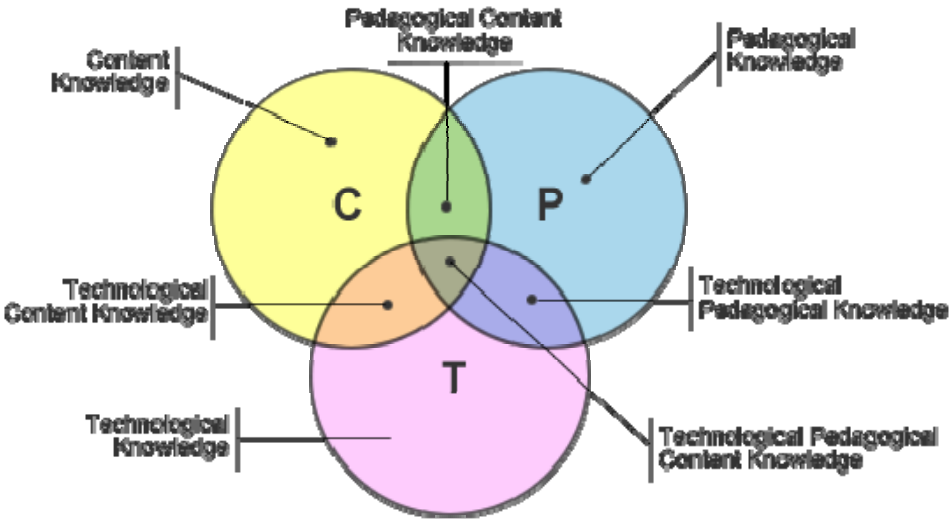
During a 2-year compilation of research on nationally recognized standards and skills, analysis of business and industry, and educator input, the North Central Regional Educational Laboratory (NCREL) developed enGauge 21st Century Skills (NCREL, 2003). These skills are closely linked to NETS for students, teachers, and administrators. Yet, NCREL (2003) broadly details four dimensions that are crucial 21st Century Skills: digital literacy, inventive thinking, effective communication, and high productivity. *Digital-aged literacy* skills are noted as necessary beyond those of basic reading, writing, and math and emphasize proficiency in "science, technology, and culture and understanding the information in all its forms" (NCREL, p. 15). The forms included in *digital literacy* are basic literacy, scientific literacy, economic literacy, technological literacy, visual literacy, information literacy, multicultural literacy, and global awareness. Inventive thinking placed an emphasis on the necessity of learning higher level critical thinking skills as a result of our increasing technology-based world. Inventive thinking skills include those of adaptability/managing, self-direction, curiosity, creativity, risk taking, and higher order thinking. Effective communication is reported as essential in a media-based world and a necessary skill in the workforce. These skills include teaming/collaboration, interpersonal skills, personal responsibility, social/civic responsibility, and interactive communication. High productivity is a category of competencies needed in

today's' workforce and includes prioritizing, planning, managing, the use of real world tools, and the ability to produce relevant, high quality products. Each dimension correlates the necessity of each skill to recent societal and economic changes, both nationally and globally. In the field of social studies these dimensions most closely relate to using technology to enhance critical thinking skills, through the use of computer tools for research, problem-solving, and decision-making tools.

In the social studies classroom, specific teaching methods when paired with the use of technology afford students opportunities to explore content and practice both 21st Century Skills and critical thinking skills that cannot be done with the textbook alone. The use of technology specific to content and social science pedagogy can be further examined through the work of Mishra and Koehler (2006). The authors highlighted how the use of technology in the classroom has become a unique 21st century pedagogical approach (Figure 1). In the technological pedagogical content knowledge (TPCK) model, the authors expanded on the work of Shulman (1986). They underscored the interchangeability of technological tools of choice, content, and pedagogy (TCP), yet contended that the nature of the forms of technology in use today yield a new teaching strategy. This added dimension highlights the changing role of technology with content and pedagogy. The use of technology tools with specific social studies content and teaching methods has become a technological pedagogy that yields learning outcomes that enhance content knowledge and enhance 21st Century Skills.

Figure 1

Technological Pedagogical Content Knowledge



Note. From "Technological Pedagogical Content Knowledge: A Framework for Integrating Technology in Teacher Knowledge," by P. Mishra and M. J. Koehler, 2006, *Teachers College Record, 108.*

Technology in the Social Studies

21st Century Skills promote higher order thinking skills necessary for citizenship education in a digital age. The National Council for the Social Studies (NCSS) and social studies education programs promote critical thinking skills which, when paired with NETS for students, afford students opportunities to develop 21st Century Skills, such as analyzing a wide variety of information while working with peers on projects and decision-making tasks (ISTE, 2007; NCSS, 1994, 2006). The NCSS (1994) holds "Expectations for Excellence," whereby learning requires students to connect prior knowledge to new knowledge to engage in problem solving, evaluation, and making informed judgments. NCSS believes that information literacy is an essential skill for "acquiring information,

reading, study, reference and information search skills and technical skills unique to electronic devices and organizing and using information thinking, decision making, and metacognitive skills" (1994, p. 1).

In the field of social studies, technology and digital literacy are supported by NCSS standards and themes (Berson & Berson, 2003; NCSS, 1994). Additionally, the enGauge 21st Century Skill of information literacy encompasses a broad effort guided by the concerns of the explosion of information now available on the Internet and in digital form. Digital literacy advocates stress the importance of teachers affording and facilitating students' opportunities to engage in active, self-directed learning activities by looking beyond their classrooms for resources on the Internet that will enrich the learning environment (NCSS, 2004; SCORE, 2004). Berson and Berson (2003) highlighted how cyber safety, digital awareness, and media literacy serve to enhance analysis and evaluation skills, affording opportunities to develop critical thinking and problem solving when dealing with vast numbers of resources and multiple perspectives. More specifically, Berson and Berson (2003) reported that digital literacy provides students with opportunities to develop the following critical 21st Century Skills: (a) global and multicultural sensitivity to information and cultures; (b) critical analysis and decision-making skills when disseminated information is compiled; and (c) appropriate use of copyrighted material and legal issues surrounding use of protected or unauthorized computer space (Berson & Berson, 2003). The current NCSS (2006) Technology Position Statement and Guidelines maintain that integrating technology in social studies is critical in fostering active

citizenship skills by affording students extended learning opportunities, experiences using technology in content context, avenues to explore the relationship of science and technology on society, and the acquisition of skills to access political-action-related sources.

In a recent nationwide survey of registered voters, 80% responded that students in our nation's schools should learn 21st Century Skills, such as critical thinking and problem solving, computer and technology skills (Partnership for 21st Century Skills, 2007). In the field of social studies, technology can serve many more functions in the classroom than merely accessing information and has the potential to enhance students' critical thinking skills and problem solving skills (Berson, 1996; Berson & Balyta, 2004; CEO Forum, 2000; Diem, 2000; Mason, Berson, Diem, Hicks, Lee, & Dralle, 2000; NCSS, 2006; U.S. Department of Education, 2005). A review of the publication trends in the field of social studies indicated that meaningful technology use depends on constructivism and student-centered learning (Becker & Riel, 2000; Bolick, McGlinn, & Siko, 2005; Doolittle & Hicks, 2003). For educators to take advantage of the technology available, the technology must be infused more into the instruction, modeled as a tool for citizenship skills and historical inquiry, and not used as a mere appendage during one or two lessons (Berson, 1996; Mason, Berson, Diem, Hicks, Lee, & Dralle, 2000; Whitworth & Berson, 2003).

Whitworth and Berson (2003) conducted an exhaustive review of more than 300 articles, reports, chapters, and books pertaining to technology use in social studies education, teaching, and learning. The authors reported that much

of the literature consisted of articles providing Internet resources, as well as lessons and articles offering an overview or historical review of technology in the social studies without specific model lessons or activities (Beal & Mason, 2001; Bellan & Scheurman, 1998; Krupnick, 1998; Wilson, Rice, Bagley, & Rice, 2000). The authors acknowledged a slight emergence of activities that enhance civic competence and critical thinking skills while using Internet resources such as telecollaboration, webquest activities, and lessons requiring that students critically evaluate content they encounter on the Internet. Furthermore, they highlighted a need for the "sharing and dissemination of effective ways" to "use technology in social studies classrooms that enhances social studies education (according to the NCSS standards) that goes beyond merely accessing information on the Internet" (Whitworth & Berson, 2003, p. 484).

Berson and Balyta (2004) offered a review of the trends of technology use in social studies and analyzed the current movements and the potential future of diffusions of innovative uses of technologies. The authors reported that uses of technology in the social studies rest in the areas of drill and practice, simulations, communication tools, and accessing vast amounts of information and resources. Areas reported by the authors to have advanced in use in classes included in-depth supplemental materials for texts, exploring current events, communication tools for online writing and discussion communities, and constructivist-based activities involving accessing and interpreting digital materials. Berson and Balyta (2004) reported slight emergence of model uses but emphasized that teachers still need "examples of methods that they can model" (p. 146).

Bolick, McGlinn, and Siko (2005) offered a thorough review of publication trends up to 2004 in *Social Education*, a National Council for the Social Studies (NCSS) publication. They reported that the majority of technology-related articles in Social Education pertain to the Internet and specific software uses. They underscored the emergence of uses of geographic information systems (GIS), databases, handheld computing videoconferencing, and digital video. They reported that the articles reflect a "changing role of the teacher and learner, one that depends on constructivism and student-centered learning" (Bolick, McGlinn, & Siko, 2005, p. 160). The final call was for more published articles on model classroom uses of technology.

In the field of social studies and technology use classroom, there is a need expressed in the literature for World History classes to supplement textbooks with information from the Internet that addresses globally related non-Western content. Newmark (2000) highlighted the profound "disparity that exists between course titles and course content" that faces teachers of K-12 World History topics (p. 1). The author noted that, traditionally, educational products were Western or Euro-centric in content. Furthermore, Stearns (2006) pointed out that as the world has become more globally interactive, a need has emerged for teachers to cover non-Eurocentric content to offer perspectives on global relationships. As Advanced Placement (AP) World History courses and curriculum debates have challenged the traditional content of World History classes, there now exists a need for access to multimedia resources to obtain non-Western content (Newmark, 2000). Similar findings were reported by

instructors of World History at the college level. For example, Kelly (2006) reported that student learning with digital media “transfers control over the exploratory aspect of learning from the instructor to the student” (p. 2). This is consistent with 21st Century Skills for students and the constructivist nature of learning with technology stressed in national initiatives (Dolittle & Hicks, 2003; NCREL, 2003).

The persistent theme across the literature was that technology used in the social studies field has the potential to enhance 21st Century Skills. Much of the research in World History teaching and learning with technology, as well as the larger social studies readership, pertains to accessing resources on the Internet. There remains a call for model lessons and activities in the scholarly field that highlight technology integration (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; NCSS, 2006; Whitworth & Berson, 2003).

The field of social studies highlights uses of technology for communication, drill and practice, simulations, information databases, use of GIS, and videoconferences and digital video (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Whitworth & Berson, 2003). Reviews of research indicated that technology does have an impact in classrooms, both on technology literacy and teaching and learning content (Becker & Riel, 2000; Berson & Balyta, 2004; Diem, 2000; Dolittle & Hicks, 2003; Kelly, 2006; McGlinn, 2007; Metiri Group, 2006). While the field has experienced a growth in publications pertaining to using technology in social studies classrooms, there remains a need for both quantitative and qualitative research to assess the integration of particular types

of technology into social studies classrooms and how lessons are used to enhance 21st Century Skills (Bennett & Berson, 2007; Bolick, Berson, Friedman, & Porfeli, 2007; Bolick, McGlinn, & Siko, 2005; Diem, 2000; Mason et. al., 2000; McGlinn, 2007; Saye & Brush, 2007; Whitworth & Berson, 2003). Such data may serve to substantiate the use of technology not only as a learning tool but to assist and encourage other educators in their own endeavors to incorporate technology into the curriculum.

Diffusion of Technological Innovations

The very idea of using technology in innovative ways is a social change or a new way of thinking about social studies pedagogy (Rogers, 1995). It is the process of transforming teaching and learning through the use of technology for student-centered learning and constructivist-based activities that enhance critical thinking (Dolittle & Hicks, 2003). Diffusion is the process of "communicating an innovation over time through certain channels to members of a given social system" (Rogers, 1995, p. 5). For an innovation to yield further diffusion, it must elicit some positive advantage for the user(s) (Rogers, 1995). There have been debates in the literature as to what exactly is the positive advantage or the best way to use technology in the classroom (Cuban, 1994, 1999; DeWitt & Horn, 2005; Healy, 1998; Postman, 1995, 2000). Some critics assert that technology will not enhance teaching beyond what can be done without it and will not transform teaching (Cuban, 2002; Postman, 2000). Furthermore, Postman (2000) argued that using technology may make reading, writing, and use of books obsolete. Innovations should only relate to cultural change and human progress

as content but not necessarily as teaching methods (Postman, 1995). Others contend that technology will not transform teaching methods, especially the teaching methods of strong veteran teachers (Cuban 2002; DeWitt & Horn, 2005). Rather, technology should be used as a tool to assist students in making informed choices and to make topics more meaningful (DeWitt & Horn, 2005; Dolittle & Hicks, 2003). Research indicates that technology, when used to construct knowledge or in a constructivist teaching model, is more readily adapted to classroom use and can yield both benefits highlighted by critics (Becker & Riel, 2000). Findings from Becker and Riel's study (2000) suggest that teachers' use of computers with students aids in the gaining of both computer usage competence and includes higher order thinking tasks through communicating, thinking, producing, and presenting their ideas (Becker & Riel, 2000). Furthermore, emphasis across the literature is placed on technology skills proficiency and technology as a learning tool to ensure technological diffusions in teacher education and training (Cantu, 2000; DeWitt & Horn, 2005; Keiper, Harwood, & Larson, 2000; Mason et al., 2000). These approaches are consistent with the diffusion of innovations and technology transfer strategies, such as addressing values-based concerns, instilling trust in technology, and easing the transition to using the technology (Rogers, 1995).

To achieve the diffusion objectives, by offering both computer literacy skills while enhancing instruction using technology, those in the field of social studies reported that transforming the curricula and instructional processes must be promoted. To ensure this diffusion into classes by future teachers, there

should be sufficient access to technology and infusion of technology into social studies methods courses while affording opportunities to consider the daily demands of a teacher (Berson, 2000; Mason et al., 2000; NCATE, 1997; Rose & Winterfield, 1999). Mason et al. (2000) highlighted guidelines for using technology in meaningful ways to prepare social studies teachers. The guidelines were based on current trends in the field and are an effective diffusion of innovation strategies (Mason, et al., 2000; Rogers, 1995). These guidelines included extending learning opportunities by accessing digital archives for historical inquiry, modeling how to use technology in context to make teaching better, affording opportunities for future educators to study the relationship and the impact of technology on science and society, and assisting teachers in using technology to foster skills for citizenship. Offering skills development and modeling of activities in the content areas they will be teaching helps future educators to build confidence and computer skills and to envision how they can use technology in teaching and learning.

Summary

The field of social studies offers published reviews of innovative uses; yet, there is a repeated call for more model uses by teachers. Guidelines have been developed based on modeling computer skills and using computers as a learning tool, and authors urge the use of technology to ensure diffusion of innovations. However, the use of models by educational faculty is split between offering skills training as opposed to technology integration (Berson, Mason, Heinecke, & Coutts, 2001). Bolick, Berson, Coutts, and Heinecke (2003) revealed that a

slightly higher number of teacher education faculty continue to focus on technology skills rather than technology-integration instruction. They also reported far more use of digital communication rather than instructional technologies (Barron, Kemker, Harmes, & Kalaydjian, 2003; Bolick, Berson, Coutts, & Heinecke, 2003). The emergence of technology usage exists across the literature and captures innovations in social studies classrooms to enhance students' 21st Century Skills. However, an examination of technological and 21st Century Skills specific to World History classes has yet to be systematically explored. This study proposed to examine the types of computer use and integration styles in World History classes according to the 21st Century Skills and NCSS technology standards.

Chapter 3

Method

Participants

The study was conducted in the School District of Hillsborough County (SDHC), a large suburban school district in Florida, the ninth largest school district in the United States. The diversity of the district matches that of the entire state of Florida, with students of the following ethnic breakdown: 43.97% White, 22.36% Black, 25.90% Hispanic, 2.70% Asian, 0.31% Native American, and 4.77% multi-racial (SDHC, 2006) students. The school district currently employs 3,336 senior-high-level teachers and employs between 6 to 20 secondary-level social sciences teachers at each of the 25 high schools. Teachers' experience ranges from 1 to 38 years (SDHC, 2006). All social science teachers in the district have access to technology and the Internet at their schools (SDHC, 2006). For the purposes of this inquiry, all secondary social science teachers of World History in the district were asked to participate in a study on the use of technology in their classes, which yielded a potential sample size of approximately 126 secondary World History teachers.

Research Design

The research design was deductive in nature and the conceptual framework is grounded in the literature reviewed in the field (Strauss & Corbin, 1990). The research employed a pragmatic, intermethod (or mixed-method)

approach, in which both quantitative and qualitative questioning techniques were used to collect data (Creswell, 1998; Tashakkori & Teddlie, 1998). The study utilized a survey with both closed-ended (quantitative) and open-ended (exploratory, qualitative) items to form complementary data (Tashakkori & Teddlie, 2003). The mixed-method design was an equivalent status design, thereby providing approximately equal and parallel data types through the quantitizing of the qualitative portions of the survey data. This method was selected because it provides complementary data to elaborate and clarify results from the quantitative portions of the selected survey instrument while serving to reduce biases and assumptions of the inquirer that may result from quantitative data analysis and to strengthen interpretability (Green, Caracelli, & Graham, 1989; Tashakkori & Teddlie, 1998, 2003).

Instrumentation

The survey instrument, Perceptions of Computers and Technology (Appendix E), was used with additional open-ended questions (Harmes, Kemker, Kalaydjian, & Barron, 2000; Hogarty, Lang, & Kromrey, 2003). The instrument was designed to measure teachers' perceptions and reported use of technology in their classrooms and was field-tested and then administered in a school-district-wide assessment that utilized 2,156 participants (Barron, Harmes, Kalaydjian, & Kemker, 2003; Harmes, Kemker, Kalaydjian, & Barron, 2000; Hogarty, Lang, & Kromrey, 2003). Exploratory factor analysis was conducted within each subscale of the instrument by descriptive data. The survey has reported scores of acceptable levels of reliability, with reported coefficient alphas

ranging from .74 to .92 (Cronbach & Azuma, 1962; Hogarty, Lang, & Kromrey, 2003). Furthermore, “relationships between instrument subscales and relationships with external variables provide initial support for the validity of the scores” (reported below; Hogarty et al., 2003, p. 158).

The instrument assesses descriptive data from each participant and consists of subscales of assessment items: confidence and comfort (α = .91); general school support (α = .82); technical support (α = .86); types of software use by teachers (α = .77); types of software use by students (α = .72); integration of technology in the classroom (α = .89); personal use (α = .74); affinity toward computer use (α = .77); and aversion toward computer use (α = .79). The survey consists of forced-choice items and represents a 5-point Likert-format scale (e.g., 1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, and 5 = *strongly agree*; Likert, 1967). An additional page was added to the questionnaire consisting of formal structured open-ended items that assess participants’ self-reported uses of technology in their classroom (Appendix F). Participants self-reported by writing directly on the survey instrument in the space provided. It was estimated that it would take approximately 30 min to complete the entire survey.

Procedure

Appropriate approvals were obtained through the school district office of assessment and accountability and then the University of South Florida (USF) Institutional Review Board (IRB) that addressed the ethical nature of this study. No participants were harmed in this study. Special permission was sought from

the IRB for an expedited review of the informed consent due to the survey nature of this study. Participants remained anonymous unless they expressed interest in being part of the qualitative data collection process by providing more detailed information in the written-response section of the survey and by opting to give their contact information.

At a monthly meeting for all high-school-level social studies department supervisors, the researcher distributed the surveys to supervisors of each of the 25 district high schools. The researcher read a script (Appendix B) to all social studies department supervisors. Each school received a packet of surveys with their school name on it as an identifier. The directions for completion of the survey were scripted and posted on the outside of the packet (Appendix C). Supervisors were instructed to follow standard district procedures, by collecting all surveys and entering the number of World History teachers in their department and the number of completed surveys enclosed (Appendix C). Supervisors were given 2 weeks to return the completed surveys in the provided addressed, stamped envelopes. This time frame was consistent with survey procedures in this school district. The packets included the school's name so that the researcher could easily identify which schools did not return their packet and contact department supervisors to ensure all completed surveys from their school were returned. Packets of surveys were delivered by the researcher to the schools without supervisor attendance at the monthly meeting where the survey materials were initially distributed. To yield a better response rate, the researcher offered both individual- and district-based incentives. A $50.00 gift certificate for

Wal-Mart was given to each of two randomly drawn participants who completed a drawing form upon returning their completed surveys (Appendix N). Additionally, one of the case study participants was randomly selected to attend the Florida Educational Technology Conference (FETC) in 2007 (Appendix N). They received a district-provided substitute teacher at no cost, and registration fees were paid to attend.

Upon receiving the completed packets, a preliminary review of the open-ended items was conducted. The researcher identified teachers who completed this section, thereby indicating that they are currently using technology in their classes, and who have provided their contact information for further research investigation of their use of technology in lessons/activities by students. Ten teachers who completed the open-ended questions were randomly selected for follow-up. The researcher contacted these teachers via email and/or by phone and made arrangements to visit them to verify the open-ended responses, to ask follow-up questions for clarification purposes, and to conduct member checking of the information gathered by the researcher. At this time, teachers were asked to submit copies of lessons or activities if they wished to be used as artifacts supporting their responses.

Quantitative Analysis

The research design was mixed method, with qualitative and quantitative components. The quantitative data collected in the survey instrument allowed for objectivity in data collection (Tashakkori & Teddlie, 1998). Descriptive statistics, means scores, and confidence intervals were calculated for each descriptive item

(SAS, 2005). Reliability coefficients were computed for each subscale using Cronbach's alpha to assess the internal consistency of the subscales scores.

Qualitative Analysis

The qualitative analysis of this mixed-method study served to add complementary data to elaborate on and clarify the results from the quantitative portions. To ensure rigor, trustworthiness, and credibility of the qualitative portion of this study, the researcher employed three strategies: unitizing/categorizing data, member checking and negative case analysis (Glaser, 1992; Glaser & Strauss, 1967; Lincoln & Guba, 1985).

The units of analysis were the individual participant's response statements to the open-ended questions and field notes from the member checking process. Each statement comprised a complete sentence, a phrase, or a word. Responses were analyzed using a constant-comparison method employing deductive logic (Denzin & Lincoln, 1994; Glaser, 1992; Glaser & Strauss, 1967; Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). The units were then categorized by identifying commonalties and relevant content among and within the response statements. Categories developed *a priori* from survey instrument and literature in the field. The categories included types of software used, types of integration, enGauge 21st Century Skills for Digital Age Literacy, and the NCSS technology standards. However, the researcher was aware that additional categories/themes may have emerged *a posteriori* as well (Glaser, 1992; Glaser & Strauss, 1967; Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). The raters used in this procedure were trained on current categories that exist within the

survey and literature and on how to code; they also confirmed with one another their results. That is, three raters conducted this process and compared and reconciled differences that emerged. Interrater reliability percentages were calculated.

Negative case or disconfirming evidence analysis involved a re-examination of responses after the initial analysis to see whether the characteristics or properties of the emergent categories and themes were applicable across cases (teachers) in order to assist in the triangulation of the complementary qualitative data (Bowen, 2005; Strauss & Corbin, 1990).

The member checking process allowed the researcher to verify the accuracy of the qualitative results through participant validation to ensure trustworthiness of the data coding (Bowen, 2005; Lincoln & Guba, 1985; Strauss & Corbin, 1990). In this study, member checking involved visiting or calling participants and asking follow-up questions for clarification of the open-ended responses. The researcher reviewed with the teacher(s) the categorization of their qualitative data to confirm accuracy of the rating of the responses. This involved asking questions to gather a clearer understanding of the teacher's reported use of technology. At the same time, participants were asked to voluntarily provide copies of lesson plans or student products for clarification. Such artifacts, if provided, permitted the researcher to implement document analysis to ensure a clearer understanding of the reported use of technology.

Quantitative and Qualitative Analysis

The use of multiple data sources allowed for triangulation of the data. In turn, triangulation allowed the researcher to compare data sources for accuracy in findings and to ensure consistency in data findings (Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). The quantitative data collected from the survey instrument offered broad descriptive data on the participants, their reported frequency of use, types of software used, and integration of computers in the classroom. The qualitative data offered detailed accounts of usage examples. The interview conducted after the completion of member checking permitted participants to add remarks and statements to clarify their use of technology and to link their usage to NCSS standards and 21st Century Skills. The data from the survey, the coding of the qualitative responses, and the responses in the interview were compared to one another to confirm or disconfirm agreement, trends, and patterns in the data.

Chapter 4

Results

Introduction

The emergence of technology usage exists across the social studies literature, but a proliferation of publications that capture innovations in social studies classrooms has yet to unfold. The purpose of this research was to examine what types of technology are being used in secondary World History classes and how they are being integrated. This study served to add to the empirical data and to guide social studies teachers in the use of technology not only as a learning tool for 21st Century Skills but to assist and encourage other educators in their own endeavors to incorporate technology into the curriculum and disseminate uses of technology.

The study employed a mixed-method approach, utilizing both quantitative and qualitative questioning techniques (Creswell, 1998; Tashakkori & Teddlie, 1998). Data were collected through the survey, Perceptions of Computers and Technology (Appendix E), designed to measure both teachers' perceptions and use of technology in their classrooms (Hogarty, Lang, & Kromrey, 2003). The instrument assessed descriptive data from each participant and 5-point Likert-format data from subscales: confidence and comfort general school; technical support; types of software use by teachers; types of software use by students;

integration of technology in the classroom; personal use; affinity toward computer use; and aversion toward computer use. The quantitative data analysis yielded mean scores and confidence intervals for items on each subscale, reliability coefficients for each subscale, and Cronbach alphas to assess the internal consistency of the subscales scores. The qualitative open-ended questions served as complementary data to the survey data. Furthermore, categorization of the qualitative data and an informal interview process served as complementary data. Member checking of the categorization of the data was conducted with the participant to ensure credibility and trustworthiness of the interpretation of responses. Using multiple sources allowed the researcher to triangulate data.

Quantitative Results

Participants. One hundred and twenty six World History teachers from all 25 high schools in the School District of Hillsborough County (SDHC) were asked to participate in the study at a fall monthly district social studies department head meeting. The researcher distributed packets of surveys and read instructions for completion of surveys and the procedures for returning the stamped, addressed envelopes directly to the researcher by the end of the fall semester. Twenty-one of the high schools opted to participate by returning completed surveys to the investigator. Email reminders were sent to department heads of the remaining 6 schools, and voicemail messages were left to indicate that late survey packets were welcome. Two of the 6 remaining high schools mailed completed surveys at the end of the school year. A total of 79 teachers (n = 79) returned completed

surveys to the investigator from 23 of the 25 high schools in the district. Thus, the rate of survey return was 62%.

Table 1 shows the descriptive data of this sample population. Of the 79 teachers who participated, 48 were male (60.76%) and 31 (39.24%) were female. The racial demographics were as follows: 6.49% African American; 82.42% White/Non-Hispanic; 1.30% Asian/Pacific Islander; 5.19% Hispanic; and 2.60% Other, not specified. Two participants (2.60%) did not complete this item of the survey. Forty teachers (50.63%) have earned a bachelor's degree and 39 (49.37%) have earned a master's of arts degree. The average numbers of years of teaching experience was 11 and ranged from 1 to 38 years. Fifty-one teachers reported that they currently taught only one of the three sophomore levels of World History; Regular World History, Honors/Gifted World History, or Advanced Placement World History; 25 teachers reported that they currently taught two of the three levels; 3 teachers reported that they currently taught all three levels of World History courses. Total course levels taught across the 79 teachers who participated were as follows: 55 (69.92%) World History Regular, 38 (48.10%) World History Honors/Gifted; and 18 (22.78%) Advanced Placement World History.

Table 1

Participants' Descriptive Data

	Frequency	Percent
Gender		
Male	48	60.76
Female	31	39.24
Race		
Native American	0	0
African American	5	6.49
White/Non-Hispanic	65	82.42
Asian/Pacific Islander	1	1.30
Hispanic	4	5.19
Other	2	2.60
Un-answered	2	2.60
Degree		
Bachelors	40	50.63
Specialist	0	0
Masters	39	49.37
Doctorate	0	0
Other	0	0
Course(s) Taught		
Regular World History	55	69.62
Honors/Gifted World History	38	48.10
Advanced Placement World History	18	22.78

Teachers reported an average number of 28 students per class with a range of 12–35 (Table 2). The average number of computers per classroom used for instruction was 1.24 with a range of 1–5, with the exception of one case where a teacher reported to have 17 laptops in a portable cart housed primarily in that particular teacher's class. Teachers reported an average number of 4

years of using computers in the classroom for instruction, with a range of 0–20. Eighteen of the 79 teachers reported access to a computer lab at their school, while the district and individual school websites reported having at least one computer lab available at each school site typically housed in the library or media center (SDHC, 2006). Of these teachers, they reported an average of .23 hour(s) of use of the computer lab by students in their class each week.

Table 2

Classroom Descriptive Data

	N	Min	Max	Mean	*SD*	Skew	Kurtosis
Teaching years	79	1	38	10.81	9.900	1.13	0.21
Students per class	79	12	36	28.00	4.934	-.063	0.34
Number of computers in class	79	1	17	1.24	2.052	6.12	45.47
Years using computers in class instruction	79	0	20	4.13	4.357	1.48	2.11
Access to computer lab	79	1	5	3.18	.384	1.72	1.00
Hours per week in lab	79	0	1	.23	.619	3.11	10.00

Question 1. What types of use of software, hardware, and/or Internet tools are being used by World History teachers? Teachers circled their level of use with a 5-item Likert scale of 1 = *not at all*, 2 = *once a month or less*, 3 = *once a week*, 4 = *several times a week*, and 5 = *every day*. The survey results (Table 3) from the subscale “types of software use by teachers” indicated that the most frequently used technology was word processors (*M* = 4.32, sk = -1.86, kr = 2.58) and Internet browsing tools (*M* = 4.32, sk = -1.74, kr = 1.55) and were used several times a week. The skew value indicated an asymmetrical distribution of

data. Negative skew values coupled with the mean indicated that a majority of participants' responses were all at the high end of the usage scale with a few outliers forming a tail in the lower frequency of use range. The kurtosis value indicated the degree that the distribution curve peaked. Items with a positive kurtosis indicated a leptokurtic peaked distribution, further signifying more responses hanging near the mean. Items with a negative kurtosis indicate a platykurtic less peaked or flat distribution. The next item used on an average of once a week was presentation software (*M* = 3.18, sk = -0.06, kr = -1.50). Teachers reported using the following items once a month or less: spreadsheets (*M* = 2.40, sk = 0.67, kr = -0.86), databases (*M* = 2.12, sk = 0.91, kr = -0.42), publishing programs (*M* = 2.31, sk = 0.71, kr = -0.86), and graphics programs (*M* = 2.00, sk = 1.32, kr = 0.24). Items with infrequent use (below once a month or less to not at all) included the following: web publishing (*M* = 1.51), drill and practice (*M* = 1.63), games (*M* = 1.79), simulations (*M* = 1.67), tutorials (*M* = 1.74), integrated learning systems (*M* = 1.23), programming (*M* = 1.51), and GIS (*M* =1.54).

Table 3

Types of Software Used to Complete School-Related Activities (by Teachers)

	n	Min	Max	Mean	*SD*	Skew	Kurtosis	Std error mean	95% Confidence interval of the mean difference	
									Lower	Upper
Word processors	74	1	5	4.32	1.159	-1.86	2.58	.13	4.06	4.60
Spreadsheets	73	1	5	2.40	1.371	0.67	-0.86	.16	2.08	2.72
Databases	69	1	5	2.12	1.312	0.91	-0.42	.16	1.80	2.43
Desktop publishing	71	1	5	2.31	1.300	0.71	-0.86	.16	1.99	2.63
Presentation software	73	1	5	3.18	1.503	-0.06	-1.50	.18	2.83	3.53
Web publishing	68	1	5	1.51	0.938	1.91	3.08	.11	1.29	1.74
Graphics programs	68	1	5	2.00	1.315	1.32	0.24	.16	1.69	2.32
Drill and practice	65	1	5	1.63	1.126	1.53	0.89	.14	1.35	1.91
Games	68	1	5	1.79	1.127	1.19	0.16	.14	1.52	2.07
Simulations	70	1	5	1.67	0.959	1.52	1.87	.11	1.44	1.90
Tutorials	69	1	5	1.74	1.038	1.44	1.55	.12	1.49	1.99
Integrated learning Systems	65	1	4	1.23	0.606	2.88	8.33	.08	1.08	1.38
Web browsers	72	1	5	4.32	1.298	-1.74	1.55	.15	4.01	4.62
Programming, authoring	68	1	5	1.51	0.954	1.97	3.24	.12	1.28	1.75
GIS	79	1	4	1.54	0.849	1.69	2.29	.11	1.32	1.76

Note. 1 = *not at all*; 2 = *once a month*; 3 = *once a week*; 4 = *several times a week*; 5 = *every day*; GIS = geographic information systems.

The survey results (Table 4) from the subscale “types of software use by students” indicated that the use of technology by students included word processors (*M* = 2.74, sk = 0.17, kr = -0.88), Internet browsing (*M* = 2.94, sk = 0.01, kr = -1.75), presentation tools (*M* = 2.13, sk = 1.06, kr = 0.33), and games

(*M* = 2.30, sk = 0.75, kr = -0.88) and were used between once a month to once a week. Teachers reported their students using other forms not at all or, in a few cases, once a month or less. These items each held means of 1.80 and lower.

Table 4

Types of Software Used to Complete School-Related Activities (by Students)

								95% Confidence interval of the mean difference	
	n	Min	Max	Mean	*SD*	Skew	Kurtosis	Std error mean	Lower	Upper
Word processors	73	1	5	2.74	1.269	0.17	-0.88	.15	2.44	3.04
Spreadsheets	66	1	5	1.51	0.916	2.24	5.42	.11	1.29	1.74
Databases	64	1	5	1.34	0.739	3.00	10.82	.09	1.16	1.53
Desktop publishing	65	1	4	1.72	0.927	1.07	0.13	.11	1.49	1.95
Presentation software	69	1	5	2.13	1.199	1.06	0.33	.14	1.84	2.41
Web publishing	64	1	4	1.52	0.835	1.63	1.95	.10	1.31	1.72
Graphics programs	64	1	4	1.78	0.999	1.05	-0.07	.12	1.53	2.03
Drill and practice	61	1	4	1.52	0.906	1.66	1.71	.12	1.29	1.76
Games	69	1	5	2.30	1.478	0.75	-0.88	.18	1.95	2.66
Simulations	65	1	5	1.80	1.063	1.30	1.08	.13	1.54	2.06
Tutorials	67	1	4	1.60	0.817	1.22	0.69	.10	1.40	1.80
Integrated learning systems	61	1	4	1.28	0.661	2.84	8.50	.08	1.11	1.45
Web browsers	70	1	5	2.94	1.701	0.01	-1.75	.20	2.54	3.35
Programming, authoring	63	1	4	1.29	0.580	2.45	7.31	.58	1.14	1.43
GIS	79	1	5	1.25	0.85	3.06	9.82	.08	1.09	1.41

Note. 1 = *not at all*; 2 = *once a month*; 3 = *once a week*; 4 = *several times a week*; 5 = *every day*; GIS = geographic information systems.

Question 2. With what types of teaching methods are computers integrated in the classroom by World History teachers? Teachers circled their level of use with a 5-item Likert scale of 1 = *not at all*, 2 = *once a month or less*, 3 = *once a week*, 4 = *several times a week*, and 5 = *every day*. The survey results (Table 5) from the subscale "integration of computers into the classroom" indicated that the most frequently used integration was as a communication tool (*M* = 3.44, sk = -0.36, kr = -1.56). The next level of use was that of once a month and included use as a research tool (*M* = 2.66, sk = 0.26, kr = -0.91), for charts and reports (*M* = 2.51, sk = .40, kr = -0.95), for classroom presentations (*M* = 2.74, sk = 0.27, kr = -1.45), in cooperative learning (*M* = 2.02, sk = 1.14, kr = 0.16), independent learning (*M* = 2.18, sk = 0.80, kr = 0.13), and as a decision-making tool (*M* = 2.00, sk = 0.64, kr = -0.99). The following yielded average level of use as not at all to once a month: small groups (*M* = 1.79), individual instruction (*M* = 1.91), and as a reward (*M* = 1.43).

Table 5

Integration of Computers Into the Classroom

	n	Min	Max	Mean	*SD*	Skew	Kurtosis	Std error mean	95% Confidence interval of the mean difference	
									Lower	Upper
Small group instruction	73	1	5	1.79	1.04	1.26	1.03	.12	1.55	2.04
Individual instruction	74	1	5	1.91	1.11	1.22	0.83	.13	1.55	2.18
Cooperative groups	73	1	5	2.02	1.14	1.14	0.16	.13	1.76	2.29
As a reward	70	1	5	1.43	0.88	2.34	5.26	.10	1.22	1.64
Independent learning	76	1	5	2.18	1.08	0.80	0.13	.12	1.94	2.43
To tutor	69	1	4	1.54	0.83	1.38	0.85	.10	1.33	1.74
To promote student centered learning	72	1	5	2.13	1.07	0.52	-0.72	.13	1.87	2.38
As a research tool for students	76	1	5	2.66	1.20	0.26	-0.91	.14	2.38	2.93
As a problem solving, decision-making tool	68	1	4	2.00	1.09	0.64	-0.99	.13	1.74	2.64
As a productivity tool (charts, reports, other)	71	1	5	2.51	1.26	0.40	-0.95	.15	2.02	2.80
As a classroom presentation tool	73	1	5	2.74	1.55	0.27	-1.45	.18	2.38	3.10
As a communication tool	73	1	5	3.34	1.66	-0.36	-1.56	.19	2.96	3.73

Note. 1 = *not at all*; 2 = *once a month*; 3 = *once a week*; 4 = *several times a week*; 5 = *every day*.

Table 6

Types of Software Used to Complete School-Related Activities (by Teachers): Correlation Matrix

	Word processing	Spreadsheets	Databases	Desktop publishing	Presentation software	Web publishing	Graphics programs	Drill and practice	Games	Simulations	Tutorials	Integrated learning	Web browsers	Programming, authoring	GIS
Word processors	----														
Spreadsheets	.94	----													
Databases	.77	.82	----												
Desktop publishing	.85	.80	.73	----											
Presentation software	.94	.86	.72	.90	----										
Web publishing	.74	.79	.71	.79	.79	----									
Graphics programs	.76	.76	.79	.87	.79	.84	----								
Drill and practice	.67	.72	.78	.70	.71	.82	.75	----							
Games	.74	.80	.80	.79	.79	.83	.84	.82	----						
Simulations	.80	.86	.78	.76	.85	.92	.83	.82	.92	----					
Tutorials	.77	.82	.74	.73	.81	.87	.79	.78	.88	.96	----				
Integrated learning systems	.67	.71	.78	.78	.70	.82	.82	.79	.82	.82	.86	----			
Web browsers	.89	.95	.78	.85	.94	.84	.83	.75	.83	.91	.87	.75	----		
Programming, authoring	.74	.79	.71	.79	.79	.92	.84	.74	.92	.92	.88	.82	.84	----	
GIS	.67	.71	.78	.79	.71	.82	.82	.79	.89	.82	.86	.93	.75	.89	----

Note. GIS = geographic information systems. Cronbach coefficient alpha for Table 6, α = .97, p < .0001.

Further analysis indicated that there is strong internal consistency of the items in the established subscales of the survey, yielding strong Cronbach coefficient alphas and individual Pearson correlation coefficients between items each of .67 and higher (p < .0001). Correlation values of .70 or higher indicate a strong correlation, and those of .40–.70 indicate a moderate correlation. For

example, correlations of .94 for web browsers and presentation software indicate that teacher responses in these two items correlate highly to one another (Table 6). Therefore, teachers' frequency ratings for these two items would be consistent within this sample and the population.

Table 7

Types of Software Used to Complete School-Related Activities (by Students): Correlation Matrix

	Word processing	Spreadsheets	Databases	Desktop publishing	Presentation software	Web publishing	Graphics programs	Drill and practice	Games	Simulations	Tutorials	Integrated learning	Web browsers	Programming, authoring	GIS
Word processors	----														
Spreadsheets	.55	----													
Databases	.51	.92	----												
Desktop publishing	.53	.79	.88	----											
Presentation software	.64	.77	.70	.83	----										
Web publishing	.51	.84	.92	.96	.80	----									
Graphics programs	.62	.75	.76	.88	.80	.84	----								
Drill and practice	.46	.67	.67	.71	.63	.75	.67	----							
Games	.64	.67	.62	.65	.69	.62	.71	.72	----						
Simulations	.53	.79	.80	.76	.74	.80	.64	.79	.74	----					
Tutorials	.46	.68	.62	.66	.71	.62	.62	.71	.71	.83	----				
Integrated learning systems	.35	.67	.75	.79	.63	.82	.67	.72	.55	.79	.71	----			
Web browsers	.54	.81	.75	.79	.83	.76	.75	.59	.72	.79	.86	.69	----		
Programming, authoring	.38	.72	.81	.85	.68	.88	.73	.78	.60	.85	.77	.93	.74	----	
GIS	.40	.67	.68	.72	.71	.76	.61	.75	.61	.88	.79	.90	.76	.89	----

Note. Cronbach coefficient alpha for Table 7, α = .98, p < .0001.
GIS = geographic information systems.

Table 8
Integration of Computers Into the Classroom: Correlation Matrix

	Small group instruction	Individual instruction	Cooperative groups	Reward	Independent learning	To tutor	Student-centered learning	Research tool for students	Problem-solving, decision-making tool	Productivity tool (charts, reports, other)	Classroom presentation tool	Communication tool
Small group instruction	----											
Individual instruction	.92	----										
Cooperative groups	.99	.92	----									
Reward	.69	.75	.69	----								
Independent learning	.73	.80	.73	.61	----							
Tutor	.52	.43	.52	.61	.41	----						
Student-centered learning	.63	.53	.63	.50	.49	.83	----					
Research tool for students	.73	.80	.73	.60	.72	.57	.68	----				
Problem-solving, decision-making tool	.49	.40	49	.47	.38	.74	.79	.55	----			
Productivity tool (charts, reports, other)	.59	.50	.59	.47	.46	.90	.81	.63	.74	----		
Classroom presentation tool	.68	.57	.68	.55	.52	.65	.64	.74	.49	.73	----	
Communication tool	.52	.40	.52	.55	.53	.52	.48	.52	.49	.59	.68	----

Note. Cronbach coefficient alpha for Table 8, α = .95, p < .0001.

Qualitative Results

The unit of analysis was the individual participant's response statements to the open-ended questions and field notes from the member checking process and interview. Each statement comprised a complete sentence, a phrase, or a word. Responses were analyzed and categorized (Denzin & Lincoln, 1994; Glaser & Strauss, 1967; Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). The

categorized units were identified by commonalties and relevant content among and within the response statements. Categories were developed *a priori* from the survey instruments and literature in the field. The categories included types of software used, types of integration, enGauge 21st Century Skills for Digital Age Literacy, and the NCSS technology standards. No new categories/themes emerged *a posteriori* (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Tashakkori & Teddlie, 1998). The researcher and two raters were trained on current categories that exist within the survey and by reading the literature in the field and on how to use the coding sheet; they also confirmed with one another their results. Each rater read, reviewed, and categorized the responses using the response sheet (Appendix G). Thus, three rating sheets were generated for each participant who opted to complete the qualitative section. Once each rater analyzed each response, the researcher compiled the three forms for each participant. As a group, the raters examined, compared, and reconciled differences that emerged. Initially, the process involved rereading the articles that defined the items in the rating sheet. The raters confirmed questions about the defined items and sample lesson descriptors with one another. After becoming familiar with the literature and definitions of terms, the raters developed consistency in rating. Interrater reliability was strong as the raters agreed at a level of 100%. The process of negative case analysis or examining any potential disconfirming evidence involved a re-examination of responses to see whether the characteristics or properties of the categories and themes were applicable across cases (teachers) in order to assist in the triangulation of the

complementary qualitative data (Bowen, 2005; Strauss & Corbin, 1990). For example, there was one case in which the teacher reported their students' use of Windows Movie Maker. This particular item was not listed on the rating sheets, but the raters decided together that this item would fall into the category of presentation software as the tool was used for presentations offered to the class.

Question 3. How are lessons and activities conducted with computers by World History teachers? The follow-up questions obtained more information on how teachers were implementing the computers that they reported use of in the survey data. Of the 79 participants, 59 participants (75%) completed the open-ended questions. In this section they described a lesson, activity, or project that incorporated the use of computers by students in their World History class(es). Overall, teachers only reported on lessons that incorporated three types of computer use: presentation software (including Windows Movie Maker), web browsers, and word processing. Two additional categories of use emerged: use of web browsers with presentation software and web browsers with word processors. The reported integration types included working in small groups, cooperative groups, student-centered learning, independent learning, problem-solving or decision-making, and then to present information to the class.

Table 9

Reported Lessons, Activities, and Projects and Integration of Computers

	n	Small group instruction	Individual instruction	Cooperative groups	Reward	Independent learning	To tutor	Student-centered learning	Research tool for students	Problem-solving, decision-making tool	Productivity tool (charts, reports, other)	Classroom presentation tool	Communication tool
Word processor	0	0	0	0	0	0	0	0	0	0	0	0	0
Spreadsheets	1	0	0	0	0	0	0	0	0	0	0	0	0
Databases	0	0	0	0	0	0	0	0	0	0	0	0	0
Desktop/publishing	0	0	0	0	0	0	0	0	0	0	0	0	0
Presentation software	23	12	1	12	0	3	0	23	0	23	0	23	0
Web publishing	0	0	0	0	0	0	0	0	0	0	0	0	0
Graphics	0	0	0	0	0	0	0	0	0	0	0	0	0
Drill & practice	0	0	0	0	0	0	0	0	0	0	0	0	0
Games	0	0	0	0	0	0	0	0	0	0	0	0	0
Simulations	0	0	0	0	0	0	0	0	0	0	0	0	0
Tutorials	1	0	0	0	0	0	0	0	0	0	0	0	0
Integrated learning systems	0	0	0	0	0	0	0	0	0	0	0	0	0
Web browsers	16	0	0	0	0	16	0	16	16	16	0	3	0
Programming, authoring	0	0	0	0	0	0	0	0	0	0	0	0	0
GIS	1	0	1	0	0	1	0	1	1	1	0	0	0
Web browsers & presentation software	15	12	3	12	0	7	0	15	15	15	0	15	0
Web browsers & word processing	2	0	2	0	0	2	0	2	2	2	0	0	0

Note. GIS = geographic information systems.

The member checking process allowed the researcher to verify the accuracy of the qualitative results through participant validation (Bowen, 2005; Strauss & Corbin, 1990). The researcher emailed teachers and requested either a meeting at their school or a telephone call to confirm the raters coding of their written responses and to ask follow-up questions for clarification of their open-ended responses. Of the 59 teachers who completed the qualitative questions, only 25 marked “yes” that the researcher may contact them for follow-up regarding their written responses to better understand the use of technology in their classes. There were three phases of contacting teachers. The first phase involved contacting 10 teachers who were randomly selected for follow up. The second phase involved contacting 10 additional teachers and those who had not replied, and the third phase involved contacting the remaining 5 teachers and all those who had not replied previously. Ultimately 8 of the 25 teachers participated in the follow up. The researcher contacted these teachers via email and by phone and made arrangements to either visit them at their school or speak by phone to verify the open-ended responses, to ask follow-up questions for clarification purposes, and to conduct member checking of the information rated by the researcher. At that time, teachers were asked to submit copies of lessons or activities to be used as artifacts supporting their responses. Initially, 3 of the first phase of 10 selected teachers responded. Two completed this process during a face to face meeting at their school and one asked to meet at the university campus as it was more convenient for them to meet prior to a class they were taking. The remaining 7 of the first phase were contacted again and

only 1 teacher replied and completed the follow-up by phone. Therefore, 4 of the initial 10 teachers participated in the follow up. Ten additional teachers were selected in the second phase and were contacted to complete the follow-up interview. One teacher responded and participated in the follow-up by phone. The remaining 9 of the second phase were contacted again and none replied to complete the follow-up. In the third phase, the remaining 5 teachers and all previous teachers who did not respond were contacted via email and by voicemail and asked to participate in the follow up. Initially, none of the teachers responded. However, at the end of the school year one teacher contacted the researcher to complete the follow up on the phone. A total of 8 teachers completed the follow-up member checking process. The member checking interviews confirmed the correct coding of all teacher-written responses and allowed for additional input and descriptions of their lesson, which added another layer of depth to how their particular lesson exhibited the 21st Century Skills and the NCSS Technology Standards (Table 10, see also Appendix G). The ratings revealed that all sample activities included each of the 21st Century Skills with the exception of scientific and economic literacy. These two items would rely on content specific to scientific concepts and economic practice and policies. While there is sufficient content in World History to practice such skills, not every lesson would necessarily include the practice of these specific skills. However, all other 21st Century Skills and all NCSS technology standards were addressed in the lessons teachers shared in this portion of the research.

Table 10

enGauge 21st Century Skills and NCSS Technology Standards

enGauge 21st Century Skills		NCSS Technology Standards/Position
Digital-Aged Literacy • Basic Literacy • Scientific Literacy • Economic Literacy • Technological Literacy • Visual Literacy • Information Literacy • Multicultural Literacy • Global Awareness • Inventive Thinking • Adapt/Managing • Self-Direction • Curiosity • Creativity/Risk Taking • Higher Order Thinking	Effective Communication • Teaming/Collaboration • Interpersonal Skills • Personal Responsibility • Social/Civic Responsibility • Interactive Communication High Productivity • Prioritizing, Planning, Managing • Use of Real World Tools • Relevant/Quality	Extend learning beyond what could be done without technology. Technology introduced in context. Opportunity for students to study relationships among science, technology, and society. Fosters the development of the skills, knowledge, and participation as good citizens in a democratic society. Contributes to the research and evaluation of social studies and technology.

Note. NCSS = National Council for the Social Studies.

Teacher A was a first-year teacher holding a bachelor's degree. She reported that her regular and Honors/Gifted students used web browsers independently to research a topic and then collaborate in the classroom with their groups on what would be presented and how. The teacher required the students to use a word processor to develop pamphlets on their topics. She assigned sample topics such as Muslim culture, Christian culture during the Crusades, technological developments across time periods and cultures, literature across time periods and cultures, women's roles across time and geographical regions, and art/architecture over time and regions. This teacher reported that using the Internet offered information above and beyond that which only one textbook

could offer but “challenges students to make decisions and judgments about the sources, points of view, and what information they will include.” She continued to state that “Internet research challenges students to think for themselves at a higher cognitive level and to be creative in how they will present information.” She added that “such skills are essential to being an informed citizen in a global world and democratic society.” This teacher offered sample lesson instructions on researching “Muslim Culture” (Appendix I).

Teacher B has taught for 22 years and holds a bachelor’s degree. He reported that his students used web browsers to conduct individual research and then collaborate with their team in and outside of class to create Microsoft PowerPoint presentations. This teacher required students to present their topics in a persuasive fashion and debate other teams to compare government philosophies, economic policies, foreign policies, and societies. His classes also conducted Internet research and wrote biographies on historical figures. This teacher reported that such projects “challenge students to be more globally aware and to make global connections with other societies.” He also stated that technology allowed his students to access “primary sources, documents, letters, and journals” that were not provided in their textbooks.

Teacher C has taught for 3 years and holds a bachelor’s degree. She reported that her Advanced Placement and Honors/Gifted students conducted Internet research in groups and prepared PowerPoint presentations for the class. Her students are given broad questions that become a unit or theme whereby groups researched and presented different aspects of the questions that lead to

whole class answers from different perspectives. An example offered was “What criteria leads to a revolution?” Students then researched different cultures, time periods, and revolutions to be presented to the class. The class as a whole then evaluated all the presentations and came to conclusions as to what characteristics or circumstances can lead to revolutions. The teachers added that such research requires the students to examine how cultures differ but how they are similar and their events project into the future and today’s events. The research her students conducted allowed them to explore topics and information not covered in the class text. It also challenged them to “discriminate and find information, evaluate websites and present support for their findings.”

Teacher D had been teaching for 7 years and held a master’s degree. He had five computers in the classroom. He reported on his Advanced Placement (AP) students’ use of Internet research, collaborating with their groups to investigate a question such as compare and contrast. His students were tasked with investigating a topic and presenting it in AP answer format but in a PowerPoint form. Students were required to locate documents and images and include a thesis statement to support their findings. He contends that the information they locate goes beyond the text, especially in areas of Asian studies. His students discovered a variety of websites that highlighted Asian art. He reported that those websites were an important tool for teaching history and learning about the culture and societies of Japan. Furthermore, students learned how storytelling was done through the use of elaborate artwork. He shared a favorite website: MIT Visualizing Cultures at

http://ocw.mit.edu/ans7870/21f/21f.027j/menu/. The website offered fine art collections with history content and curriculum that would not have been accessible to his students without the Internet. His students were also required to conduct research throughout the school year on a wide range of topics including the following: comparing cultures, inventions, technology, industrialism, wars, globalization and global contributions, and their impact on today's world events. This teacher offered sample lesson instructions on researching "Asian Cultures from 800 BCE to 1450" (Appendix J).

Teacher E has taught for 5 years and holds a bachelor's degree. She reported on her regular World History students' use of Internet research, collaborating with their groups to research a topic and prepare class presentations using PowerPoint presentations. She reported that her students must conduct research on specific cultures and include information of their government structure, economies, trade, and major religions. She reported that students cannot create such "well informed presentations without information outside of the text." She believes strongly that these projects help "bridge cultural connections as students can explore things our culture has or does not have in common with peoples around the world." She also adds that such "critical thinking rigor and the use of technology prepares students for the working world, college, and life as an informed citizen."

Teacher F has taught for 5 years and holds a master's degree. She reported on her regular World History students' use of Internet research, collaborating with their groups to research a topic and prepare class

presentations using word processing tools and publishing tools. One example of a project was to study the major religions of the world and to prepare presentations and major characteristics of renaissance art, architecture, literature, philosophy, and politics/government (Appendix K). The “task can only be completed with complementary information found outside of the textbook.” The teacher reported that students developed thesis statements to introduce their topics and then supported the statement with information found in their search.

Teacher G has taught for 5 years and holds a bachelor’s degree. He reported on his Advanced Placement World History students’ conducting independent Internet research and tools and using word processors to prepare reports, presentations, and maps. He reported that his students are tasked with visiting Worldmapper.org (SASI Group & Newman, 2007). His students are required to visit the website and examine various data and maps across countries and time periods. In some cases, data are available from the year 1500 to 2007. Students can opt to select pre-existing maps or can create a map of categories of interest to them. Students must print their maps or import them to a word processing tool and include a written report and analysis of the results linking the topic to an item they have studied in class. Additionally, students must report what they think people should know or can learn from this data. Students ultimately presented their findings to the class. This teacher contends that “this activity makes students more aware of differences around the world and of

issues that are globally important." He feels technology is crucial in the social studies classroom and offers more than one textbook can provide.

Teacher H has taught for 12 years and holds a bachelor's degree. She reported on her regular World History students' use of Internet research, collaborating with their groups to research a topic and prepare PowerPoint presentations to be presented to the class. Students are tasked with researching differences across (a) genders, cultures, and time periods, (b) government structures across time, and (c) technology across cultures and time periods. This teacher added that she is amazed with the information her students have located and the wealth of websites they have introduced to her, which she can in turn use in future classes. She stated that using technology required students to make decisions similar to that of a historian. They learn that "they can choose to use information or disregard information and that decision" can impact the presentation. This "knowledge is crucial to living in today's' world with so much information available on TV and on the Internet." She contends that students must have the life skills to locate, collect, and make decisions about information.

Textbook technology support. During the member checking process and interview, teachers were asked what textbooks and teacher kits they use and what technology support is offered and/or used in their classes. The district has adopted McDougall Littel's "World History: Patterns of Interaction" (Beck, 2005) for use in Regular and Honors/Gifts World History classes and McGraw Hill's "Traditions and Encounters: A Global Perspective on the Past" (Bentley, 2006) for Advanced Placement World History classes. All 9 teachers reported that the

textbooks provide CD-ROM visual aids, websites, and links within the textbook chapter and units, and the textbooks offer an online support site that includes online e-books including chapters, chapter summaries, flashcards, notes, review games, puzzles, study guides, and online quizzes. Teachers consistently reported that the textbooks offer CD-ROM support including visual aids of maps, graphs, charts, and images. They added that a feature they appreciated was that the maps offer descriptor overlays at a click of a button that they could not easily recreate with an overhead transparency and marker. Two of the 9 teachers found this to be a great resource, as they have a multimedia projector in their classroom. Seven of the 9 teachers found it inconvenient that they do not have their own multimedia projector but a departmental projector that must be checked out for use. They reported that they cannot rely solely or become dependent on the CD-ROM visual aids. Teachers also reported that the textbooks include website links related to the chapter or unit. Three teachers reported using these sites or asking students to visit these sites but have found them to be unreliable as some sites no longer exist or have moved since the textbook went into print. Additionally, they reported that it is easier for their students to conduct an Internet search of the item they are researching in order to locate information. The remaining 7 teachers do not use the websites or links provided in the textbook. Three teachers reported requiring students to access the textbook website and to take online quizzes and bring in printouts of their scores as homework.

Additional Results

The survey instrument collected additional data that was not specific to the research questions but that might shed some light on inferences drawn from the data analysis. Teachers on the average reported that they “agree” that they have confidence and comfort using computers effectively in their classrooms and in computer assignments and that they “agree” that computers enhance teaching. They reported on the average that they are “neutral” about general school support. Teachers responded on an average that they use computers for personal use “several times per week” as a communication tool, a productivity tool, and as a research tool, and “once a week” for multimedia use and for fun or entertainment. Participants’ affinity toward computer use in the classroom was consistently reported as “agree” and the reported aversion was low as a reported “disagree” to items on this scale.

Summary of Quantitative and Qualitative Results

The use of multiple data sources allowed the researcher to triangulate the data for accuracy in reporting of findings and to ensure consistency in data findings and reporting. The quantitative data offered broad descriptive data on the participants, their frequency of software use and integration of computers in the classroom. The qualitative data offered more detailed accounts of uses consistent with the usage themes from the survey data. The member checking process ensured the credibility and trustworthiness of qualitative data interpretation and coding, while permitting participants to add remarks and statements in an interview to enhance the understanding of their use of

technology, which complements both the previously collected quantitative and qualitative data.

The survey data gathered information from 79 teachers or 63% of the World History teachers in the district. The quantitative data revealed that the majority of the surveyed teachers who use technology in the class use word processors and Internet browsing tools, and then presentation software. The primary forms of integration of technology were for communication, classroom presentations, charts and reports, cooperative learning groups, independent learning, and as a decision making tool. Fifty-nine of the 79 participants (75%) opted to complete the written responses on the survey. Consistent with the survey results, the qualitative data yielded teacher reported lessons, activities, or projects that incorporated the use primarily of web browsers, presentation software, and word processing.

Chapter 5

Conclusions and Recommendations

Purpose of the Study

The purpose of this study was to examine what types of technology were used in secondary World History classes and how they were integrated. This study served to add to the data in the field, examine use of technology as a 21st century learning tool, and encourage other educators in their own endeavors to incorporate technology into the curriculum. The mixed-method approach utilized the survey instrument, Perceptions of Computers and Technology (Appendix E), designed to measure both teachers' perceptions and use of technology in their classrooms, combined with qualitative inquiry of written responses and selected cases. The data gleaned from the written responses and the selected case studies served to provide complementary data to elaborate and clarify results from the quantitative portions of the analysis (Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003).

Research Questions

The study explored the following research questions:

1. What types of software, hardware, and/or Internet tools are being used by World History teachers? (Quantitative)

2. With what types of teaching methods are computers integrated in the classroom by World History teachers? (Quantitative)

3. How are lessons and activities conducted in the classroom by World History teachers? (Qualitative)

Significance of the Study

Social studies content and teaching strategies that require higher order or critical thinking yield promising grounds for innovative uses of technology to develop 21st Century Skills. However, there has been a need for research in the field that addresses effective practice and pedagogy of uses of technology in the classroom as linked to 21st Century Skills and the NCSS (2006) technology guidelines (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Doolittle & Hicks, 2003; McGlinn, 2007; NCSS, 2006; Whitworth & Berson, 2003). The data yielded technology usage patterns consistent within the literature. The study was significant in that it revealed a clear linkage to NCSS technology standards and 21st Century Skills that enhance critical thinking, problem-solving, and decision-making skills in the social studies classroom.

Procedures

The study employed a mixed-method design. All World History teachers in the school district were invited to complete the quantitative survey, which included open-ended questions that yielded qualitative data. The written responses were reviewed and coded by three raters according to the types of software and integration styles in the survey and related literature. A small sample volunteered to participate in a follow-up interview that consisted of member checking the accuracy of the raters' interpretation of the written response as well as asking follow-up questions and permitting teachers to add

comments and/or submit copies of lessons, activities, or projects as artifacts. The use of multiple data sources allowed the researcher to triangulate the data for accuracy in reporting of findings and to ensure consistency in data findings and reporting. The member checking processes ensured credibility and trustworthiness of the ratings of the written responses.

Discussion of Findings

Seventy-nine World History teachers (62%) participated in the study by volunteering to complete the survey. Fifty-nine teachers completed the written responses and 25 of those teachers checked the option on the form that they agreed to be contacted for a follow-up. All teachers were contacted and invited to participate in the follow-up. Eight total teachers replied and participated in the follow-up interviews.

Types of software (Question 1). Teachers reported a high frequency of use of word processors, Internet browsing tools, and presentation software. They reported moderate teacher use of spreadsheets, databases, publishing programs, and graphics programs. Items of infrequent teacher use or no use at all were web publishing, drill and practice, games, simulations, tutorials, integrated learning systems, programming, and GIS. Teachers reported that their students frequently used word processors, Internet browsing tools, presentation software, and games. Items of infrequent student use to no use at all were spreadsheets, databases, desktop publishing, web publishing, graphics, drill and practice, simulations, tutorials, integrated learning systems, and GIS. The data were consistent with literature in the field indicating that the primary use of

computers by students in the field of social studies is that of word processing, Internet searches, presentation creation with spreadsheets, databases, desktop publishing, web publishing, graphics, drill and practice, simulations, tutorials, integrated learning systems, and GIS (Berson, 1996; Berson & Balyta, 2004; Bolick, McGlinn, and Siko, 2005; Whitworth & Berson, 2003). The correlations in this and all the subscales were quite high and revealed that the teachers were likely to report rates of frequency consistently across items of similar ratings. For example, teachers who reported high level of use of web browsers were likely to be the same teachers who reported high levels of use of presentation tools.

Types of integration (Question 2). Teachers reported that they most frequently used the computer as a communication tool. They also reported frequent to moderate use as a research tool, for charts and reports, for classroom presentations, in cooperative learning, in independent learning, as a productivity tool, and as a problem-solving or decision-making tool. Items of infrequent use to no use at all included small groups, individual instruction, and as a reward. These data are consistent with findings in a large-scale study conducted in this district across schools and subject areas (Barron, Kemker, Harmes, & Kalaydjian, 2003). The researchers of that study found that the most frequent integration by social studies teachers was that of a communication tool followed by research, as a productivity tool, and for problem-solving or decision-making.

Lessons and activities (Question 3). Teachers were asked to share a lesson, project, or activities that incorporated the use of computers by students in

their classes. Of those that opted to complete the written portion of the survey, teachers reported on lessons that incorporated three types of computer use: presentation software (including Movie Maker), web browsers, and word processing. Two additional categories of use emerged: use of web browsers with presentation software and web browsers with word processors. Teachers integrated computers into these lessons, activities, or projects through small groups, cooperative groups, student-centered learning, independent learning, problem-solving, or decision-making and required presentation of the information to the class. The ratings of the written responses indicated representation of sample lessons, activities, and projects that exhibit development of all 21st Century Skills of digital literacy, inventive thinking, effective communication, and high productivity and were clearly linked to the NCSS technology standards (Table 10). The areas of scientific and economic literacy were specific to content topics selected by students and teachers.

Interpretation of mixed data. There was consistency across data sources (survey data, written response codings, and interview data). The qualitative data complemented the quantitative data with information not focused on by the survey. The information gathered from teachers in the member checking process and follow-up interview indicated strong arguments for computers as a tool to enhance critical thinking and 21st Century Skills.

Teachers described assigning teams to research topics whereby students conducted historical inquiry, made decisions about what information should be presented, and created classroom presentations to their peers. The topics

ranged from investigating aspects of Muslim culture and Christian culture during the Crusades, technological developments across time periods and cultures, literature across time periods and cultures, women's roles across time and geographical regions, and art/architecture over time and regions; comparing government philosophies, economic policies, foreign policies, and societies; investigating what criteria leads to a revolution across different cultures and time periods; examining how ancient Asian history was documented in artwork and making interpretations of historical events using digitized Japanese art online at MIT Visualizing Cultures, challenging students to investigate a world issue and use Worldmapper.org (SASI Group & Newman, 2007) to graph the data supporting their research on the topic; and, lastly, to using a simulation website called Pyramid Challenge (BBC, 2007), whereby student decisions related to geography, math, economy, and labor impact the final outcome of the building structure and stability.

Teachers consistently reported that it is crucial to enhance textbook content with research from the Internet, especially in areas of Asian and Middle Eastern culture and histories (Newmark, 2000). Furthermore, teachers reported that the action of historical inquiry affords students opportunities to use valuable research to problem solve and make decisions, while collaborating with their team. Teachers reported that these skills are fundamental for living in today's globally connected world and crucial to informed citizenship. Teachers also indicated that the very nature of World History involves global comparisons. This required the development of thesis statements while providing supporting

evidence. Teachers expressed concern that when the textbook provides the data, summary, and thesis, the critical thinking or decision-making is done for the students and this does not afford students the opportunity to develop valuable real world skills.

The nature of the World History classroom challenges students to compare, over time and change, human developments and interactions between cultures, states, governments, and economic systems, expansion, conflict, economic trade, and labor. Furthermore, the courses examine gender roles, religion, technology, arts, and inventions (College Board, 2007; Florida Department of Education, 2007). The very nature of the content knowledge offers many opportunities for the intersection with pedagogy and the integration of technology (Bull et al., 2007; Mishra & Koehler, 2006; Shulman, 1986). Shulman (1986) highlighted the interchangeability of content covered, pedagogical practice, and technological tools of choice (TCP Model). Recently, Mishra and Koehler (2006) expanded this model to underscore the changing role of technology with content and pedagogy (Figure 1). The use of 21st century technology tools with specific content and teaching methods has become a pedagogical strategy in its own right, referred to as Technological Pedagogical Content Knowledge (TPCK), whereby students conduct high order thinking projects that "extend learning beyond what can be done without technology" (NCSS, 2007, p.1).

Teachers interviewed in this study revealed specific use of technology to enhance students' comprehension of content knowledge (Table 11). The

requirements of students in World History courses required the act of doing historical inquiry by conducting research to compare peoples and cultures across time. Students delved into content-specific projects for historical inquiry with various uses of technology. Technological Pedagogical Content Knowledge in World History classes afforded students opportunities to enhance their 21st Century Skills while addressing the NCSS Technology Standards.

Table 11

Technological Pedagogical Content Knowledge in World History

Pedagogical knowledge	Content knowledge	Technological knowledge
Historical inquiry in … • small groups • cooperative groups • student-centered learning • independent learning • problem-solving or decision-making • presentations	• Investigating aspects of Muslim culture and Christian culture during the crusades • Research topics across time periods and cultures/geographic regions, such as o technological developments o Literature o women's roles o art/architecture over time and regions o government philosophies, economic policies, foreign policies, and societies • Investigating what criteria leads to a revolution across different cultures, and time periods • Examining how ancient Asian history was documented in artwork and making interpretations of historical events using newly digitized Japanese art online at MIT Visualizing Cultures • Challenging students to investigate a world issue and use Worldmapper.org to graph the data supporting their research on the topic • Using a simulation website Pyramid Challenge whereby student decisions related to geography, math, economy, and labor impact the final outcome of the building structure and stability	• Presentation tools • Web browsers • Word processing • Web browsers & presentation tools • Web browsers & word processing

Limitations

There were limitations to the study that should be noted. Every effort was made to reduce attrition and to increase internal validity. Efforts were made to reach participants to complete the follow-up, including visiting them at their schools or conducting telephone interviews. However, a potential bias of the sample population may exist as participation was voluntary. An interest or particular disposition toward computer use may have influenced volunteering for this portion of data collection. Every effort was made to reduce r*esearcher bias* through the use of prepared scripts and written instructions that were used when administering the survey materials (Campbell & Stanley, 1963). The following threats to external validity must also be considered. *Population validity* relates to generalizing to the population from which the sample was drawn, and the findings from this study may not generalize to the entire population of World History teachers in this district as there may have been a bias or predisposition to technology use or concerns that prompted the sample population to participate (Campbell & Stanley, 1963).

Recommendation for Future Research

The results of this study are consistent with previous findings in the publication field of social studies and social studies education (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Whitworth & Berson, 2003). It indicated usage of technology in World History classes consistent with 21st Century Skills and the NCSS Technology Standards. Social Studies content and teaching strategies that require higher order or critical thinking yield promising grounds for

technology use to develop 21st Century Skills. The survey of teachers in this district did not reveal new innovative uses of computers, beyond that of previous literature (Berson & Balyta, 2004; Bolick, McGlinn, & Siko, 2005; Kopkowski, 2006; NCSS, 2006; Technology Counts, 2006; U.S. Department of Education, 2004, 2005; Whitworth & Berson, 2003). It must be noted that particular social studies courses might indicate different styles of integration based on the very nature of the course (Bull et al., 2007; Mishra & Koehler, 2006; Shulman, 1986). For example, geography teachers may be more inclined to use GIS systems, maps, and charting tools than World History teachers. Research in the areas of specific courses within the field of social studies or a cross comparison of uses may uncover differences in technology use and integration. Furthermore, the incorporation of the TPCK framework and model uses of technology into social science methods courses for teacher preparation yields grounds for further diffusions of innovations, as well as examining the changing role of teacher willingness to incorporate technology into classrooms.

Still, new uses of technology are beginning to emerge in the literature that were not in use in the sample population of this study. Other technologies emerging in the field should be further examined in relation to World History content. The use of virtual artificial societies, whereby students make decisions that act as catalysts that impact society, help students make a connection between individual decisions and the impact on the larger society (Berson & Berson, 2007). Such activities could be further explored in World History classes to examine the impact of expansionism on cultures, trade, economics, spread of

technology, and religious practices. The use of digital audio through creating free PodCasts is used in classrooms to challenge students to research, gather data, write scripts, and edit and record newscasts on a particular topic (Lipscomb, Guenther, & McLeod, 2007; Vincent & van't Hooft, 2007). For example, students could be assigned to create "In the news today circa 1450" Pod casts whereby groups could be assigned a culture or region around the world. The Learn out Loud Podcast directory at http://www.learnoutloud.com/Podcast-Directory offers World History related Podcasts that can be used by teachers for content sake, as well as offering models or examples for students to consider when building their own. Use of web-mapping and virtual globes using GIS and Google Earth afford opportunities to explore world issues and conduct global problem-solving from a technology and visual spatial skills aspect (Eui-kyung, 2007a, 2007b). These new technologies should be explored for their ability to expand content knowledge, while transforming pedagogy and enhancing technological and 21st Century Skills (Bull et al., 2007; Mishra & Koehler, 2006; Shulman, 1986).

Recent trends have indicated an interest in examining learning outcomes specifically attributed to technology use in content areas (Schrum et al., 2007). Some authors contend that there is a need to link skills acquired through the use of technology to higher order thinking skills of standardized and/or high stakes testing (Friedman, 2006; Schrum et al., 2007). Studies that examine learning outcomes by traditional, textbook-based methods in comparison to computer-based historical inquiry might offer insight into these areas of study. In the field of social studies, use of computers for research purposes—for example, collecting

and sorting data for presentations—enhances students' skills of literacy, decision-making, historical thinking, inquiry, subject mastery, and active citizenship skills. Still, research by Saye and Brush (2007) indicates that while students can and do conduct searches for information areas, there is a need for further study into the pedagogy of scaffolding activities to assist students in the critical thinking skills of synthesizing the information into complex forms of self-discovered thesis development, narratives, and arguments (Saye & Brush, 2002, 2007).

Summary

The mix-method study investigated the types of computer software use and styles of integration in World History classes in one of the largest school districts in the nation. In the first phase of data collection, quantitative data was gathered using the survey instrument, Perceptions of Computers and Technology (Appendix E). The statistical analysis yielded descriptive demographic data and Likert-format data on subscales: confidence and comfort; general school support; technical support; types of software use by teachers; types of software use by students; integration of technology in the classroom; personal use; affinity toward computer use; and aversion toward computer use. Statistical analysis generated mean scores, reliability coefficients ($p < .0001$) at .67 or higher and Cronbach alphas ($\alpha = .95–.97$). The quantitative data revealed that teachers in this district primarily used computers for communication and for student Internet research and presentations.

The qualitative phase of the data collections was gathered through written responses on questions added to the survey and through interviews asking teachers to share a lesson, activity, or project requiring the use of computers by their students. Written responses were evaluated and coded according to types of software use and style of integration, 21st Century Skills, and NCSS technology standards. Teachers reported on lessons incorporating the use of Internet research and presentation preparation using either word processors or Microsoft PowerPoint. The interview consisted of a member checking process to confirm ratings and interview questions to better understand the skills acquired in the reported lessons. While there was no reporting of new innovative uses of computers that go beyond current literature in the field, teachers offered compelling responses as to how lessons incorporating Internet research and presentations enhance critical thinking skills that correlate to 21st Century Skills and NCSS standards for use of technology. Teachers reported that computers are not merely another means to the same ends as a textbook, but rather a tool to research knowledge, make decisions, problem solve, formulate thesis statements, and construct knowledge to be presented to classmates. Furthermore, World History teachers reported the importance of outside information provided through Internet research as it yields content across expansive time frames and across many cultures that textbooks do not cover adequately. The tasks conducted by students afforded opportunities to enhance critical thinking and problem-solving skills using digital resources and technology tools. These skills are highly noted as essential skills unique to today's

technology-based and globally interactive world and are essential for preparing tomorrows citizens in not only World History classes but in all social studies classrooms.

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Appendix A

Data Collection Timeline

QUAN/qual Survey data collected: November-December, 2006

QUAN/qual QUAN data entry: January, 2007

QUAL Follow-up data collected: January-May, 2007
Follow-up data entered: May-June, 2007

QUAN/qual QUAN/qual data analysis: July-August, 2007

QUAN/qual Results interpreted: August, 2007

Appendix B

Researcher Script

Hello, my name is _____. Thank you for including me in your meeting agenda today.

I am conducting a research study that examines what types of technology are being used in secondary World History classes and how they are being integrated. This study serves to add to the empirical data and to guide social studies teachers in the use of technology not only as a learning tool but to assist and encourage other educators in their own endeavors to incorporate technology into the curriculum.

Your teachers may opt to remain anonymous. However, if teachers are using technology in innovative ways, I would like to interview them further to document their use in their classroom. There is a section in the survey that explains this to your teachers.

Your participation in this study is very valuable and having each of your World History teachers complete the survey is important to the quality of data analysis.

Please give a survey to each teacher of World History in your department. Ask that they complete the survey and return it to you by _____ _____. Place all surveys in the addressed envelope provided. Once you have received all completed surveys please return them to your district supervisor's office by _____.

Appendix C

Packet Cover Sheet

World History Teachers

Technology Study

School _____

Instructions:

1) Please give a survey to each World History teacher in your department.
2) Ask that they complete the survey and return it to you by _____
3) Place all surveys in the addressed, stamped envelope provided.
4) Once you have received all completed surveys, return them in the addressed, stamped envelope provided by _____.
5) How many teachers in your department teach World History? _____
6) How many completed surveys are enclosed? _____

Appendix D

Informed Consent Form

Space below reserved for IRB Stamp – Please leave blank

Informed Consent for an Adult

Social and Behavioral Sciences
University of South Florida

Information for People Who Take Part in Research Studies

The following information is being presented to help you decide whether or not you want to participate in a research study. Please read this carefully.

Title of research study: Secondary World History Teachers' Integration of Technology Into the classroom
Person in charge of study: Shelli A. Whitworth

Where the study will be done: All high schools in your school district

Should you take part in this study?
This form tells you about this research study. You can decide if you want to take part in it. You do not have to take part. Reading this form can help you decide.

Why is this research being done?
The purpose of this study is to gain a better understanding of how educators use technology in the classroom. Responses will be kept strictly confidential and individual responses will not be identified.

Plan of Study
The survey includes sections addressing levels of confidence and comfort, general school support, technical support, types of software use by teachers, types of software use by students, integration of technology in the classroom, personal use, affinity toward computer use, and aversion toward computer use. Additional questions will allow you to write how you are using technology in your classroom. The survey should take approximately 15-20 minutes to complete the survey. If you are interested you may check on the survey to be contacted by the researcher to offer more details on your innovative lessons using technology. Your participation is voluntary. Refusal to participate will not result in any penalty or loss of benefits. You may withdraw your participation at any time.

Benefits of Taking Part
Your responses will help the researcher understand technology use in the your field. In the past such data has been used to assist districts in obtaining technology, grants, and materials for teachers.

Payment for Participation
You will not be paid for taking part in this survey. Incentives will be offered to those that complete the survey. A $50.00 gift certificate for Wal-Mart will be given to each of two randomly drawn participants who complete a drawing form upon returning their completed surveys. Additionally, one participants will be randomly selected to attend the Florida Educational Technology Conference in 2007 at no cost to the teacher including paid registration fees to attend and one night hotel expenses.

What are the risks if you take part in this study?
There are no known risks to those who take part in this study.

What will we do to keep your study records private?
Responses will be kept strictly confidential and individual responses will not be identified. Federal law requires us to keep your study records private:

- The USF Institutional Review Board (IRB)
- The United States Department of Health and Human Services (DHHS)

Questions and Contacts

- If you have any questions about this research study, contact Shelli Whitworth at (813) 974-9055.

- If you have questions about your rights as a person who is taking part in a research study, you may contact the Division of Research Compliance of the University of South Florida at (813) 974-5638. Consent to Take Part in this Research Study

Appendix E

PERCEPTIONS of COMPUTERS & TECHNOLOGY

World History Teachers

Purpose: This survey is designed to gain a better understanding of how educators use technology in the classroom and their level of experience with computers. The survey includes sections addressing level of confidence, skill, support, and uses of computers and technology in teaching. Responses will be kept strictly confidential and individual responses will not be identified or reported. Your participation is voluntary.

Thank you for your time and interest.

Please tell us about yourself:

Name of your school: _____.

Gender: Male_____ Female_____

Race/Ethnicity:
___ Native American /American Indian
___ African American
___ White/ non-Hispanic
___ Asian/Pacific islander
___ Hispanic
___ Other, please specify _____.

Highest degree earned:
___ Bachelors
___ Specialist (Ed.S)
___ Other, please specify _____.
___ Masters
___ Doctorate

What subject area(s) do you teach? (Check all that apply)
____ English
____ Math
____ Physical Education
____ Science
_X_ Social Studies
____ Other, please specify _____.
____ Art / Music
____ Media / Technology specialist
____ Special Education
____ Vocational Education
____ Reading

Total teaching experience in years: _____
What grade level(s) do you currently teach? _____
Average number of students per class: _____
Number of computers in your classroom used for instruction: _____
How many years have you been using computers in your classroom for instruction? _____.
Do you have access to a computer lab? _____Yes _____No
If yes, how many hours each week do your students use the lab? _____

SR-00-609*

TEACHER PREPARATION FOR COMPUTER USE

Directions: For the following items please circle the one response that best reflects the extent to which you've acquired computer skills from the following sources.

1= not at all
2= to a small extent
3= to a moderate extent
4= to a great extent
5= entirely

As part of your undergraduate coursework	1	2	3	4	5
Inservice courses / workshops	1	2	3	4	5
Independent learning (e.g., online tutorials or books)	1	2	3	4	5
Interaction with other faculty / staff	1	2	3	4	5
Distance Learning courses	1	2	3	4	5
To what extent do you think the following types of computer education would be beneficial to you?					
Introductory computer skills	1	2	3	4	5
Specific applications (e.g., spreadsheet, desktop publishing)	1	2	3	4	5
Specialized training on integrating the computer into the classroom	1	2	3	4	5

CONFIDENCE AND COMFORT USING COMPUTERS

Directions: Please read the following statements and circle the one response that best reflects your level of agreement.

1= strongly disagree
2= disagree
3= neutral
4= agree
5= strongly agree

I have had adequate training in using computers.	1	2	3	4	5
I use computers effectively in my classroom.	1	2	3	4	5
I am comfortable giving computer assignments to my students.	1	2	3	4	5
The computer enhances my teaching.	1	2	3	4	5
I am comfortable using computers during classroom instruction.	1	2	3	4	5
My use of computer technology enhances student performance.	1	2	3	4	5
Incorporating multi-media into lessons enhances teaching.	1	2	3	4	5
I am comfortable with computer terminology.	1	2	3	4	5
I am developing expertise in the uses of technology in the classroom.	1	2	3	4	5

GENERAL SCHOOL SUPPORT

Directions: Please read the following items and circle the one response that best represents your level of agreement.

1= strongly disagree
2= disagree
3= neutral
4= agree
5= strongly agree

I have adequate time to learn computer skills.	1	2	3	4	5
I have sufficient access to computers at my school.	1	2	3	4	5
I receive a sufficient level of computer related support at my school.	1	2	3	4	5
Faculty members encourage the use of computers.	1	2	3	4	5
The administration supports computer related training.	1	2	3	4	5
The administration actively encourages the use of computers in the classroom.	1	2	3	4	5
The administration actively encourages the use of computers outside the classroom.	1	2	3	4	5

TYPES OF SOFTWARE USED TO COMPLETE SCHOOL RELATED ACTIVITIES

1= not at all
2= once a month or less
3= once a week
4= several times a week
5= every day

Directions: For each type of software please circle your response to indicate how often you use the software (on the left) and how often your students use the software (on the right) to complete school related activities. If you feel an item does not apply then circle (NA).

1=not at all
2=once a month or less
3= once a week
4= several times a week
5= every day

My Use							My Students' Use					
1	2	3	4	5	NA	Word processors (e.g., AppleWorks, MS Word, ClarisWorks)	1	2	3	4	5	NA
1	2	3	4	5	NA	Spreadsheets (e.g., Excel, Lotus)	1	2	3	4	5	NA
1	2	3	4	5	NA	Databases (e.g., FileMaker Pro, Access)	1	2	3	4	5	NA
1	2	3	4	5	NA	Desktop publishing programs (e.g., Pagemaker, Microsoft Publisher, Printshop)	1	2	3	4	5	NA
1	2	3	4	5	NA	Presentation software (e.g., PowerPoint, Persuasion, Hyperstudio)	1	2	3	4	5	NA
1	2	3	4	5	NA	Web publishing programs (e.g., FrontPage, PageMill, Dream Weaver, Claris Homepage)	1	2	3	4	5	NA
1	2	3	4	5	NA	Graphics programs (e.g., Draw & paint programs, PhotoShop, FreeHand, Illustrator)	1	2	3	4	5	NA
1	2	3	4	5	NA	Drill and practice	1	2	3	4	5	NA
1	2	3	4	5	NA	Games	1	2	3	4	5	NA
1	2	3	4	5	NA	Simulations	1	2	3	4	5	NA
1	2	3	4	5	NA	Tutorials	1	2	3	4	5	NA
1	2	3	4	5	NA	Integrated Learning Systems (e.g., Josten, CCC)	1	2	3	4	5	NA
1	2	3	4	5	NA	Web browsers (e.g., Netscape Communicator, Internet Explorer)	1	2	3	4	5	NA
1	2	3	4	5	NA	Programming / authoring tools (e.g., Authorware, Java, Visual Basic)	1	2	3	4	5	NA

INTEGRATION OF COMPUTERS INTO THE CLASSROOM

Directions: Listed below are teaching modes in which computers may be used. Indicate how often you use computers in each teaching mode. If you feel an item does not apply then circle (NA).

1= not at all
2= once a month or less
3= once a week
4= several times a week
5= every day

Small group instruction	1	2	3	4	5	NA
Individual instruction	1	2	3	4	5	NA
Cooperative groups	1	2	3	4	5	NA
As a reward	1	2	3	4	5	NA
Independent learning	1	2	3	4	5	NA
To tutor	1	2	3	4	5	NA
To promote student centered learning	1	2	3	4	5	NA
As a research tool for students	1	2	3	4	5	NA
As a problem solving/decision making tool	1	2	3	4	5	NA
As a productivity tool (to create charts, reports or other products)	1	2	3	4	5	NA
As a classroom presentation tool	1	2	3	4	5	NA
As a communication tool (e.g., email, electronic discussion)	1	2	3	4	5	NA

YOUR PERSONAL USE OF COMPUTERS

Directions: Please read each statement and circle the one response that best reflects the frequency of your computer use. If you feel an item does not apply then circle (NA).

1= not at all
2= once a month or less
3= once a week
4= several times a week
5= every day

For multimedia activities (e.g., CD-ROM, laserdiscs)	1	2	3	4	5	NA
For fun/entertainment related activities	1	2	3	4	5	NA
As a communication tool (e.g., email, electronic discussion)	1	2	3	4	5	NA
As a productivity tool (to create charts, reports or other products)	1	2	3	4	5	NA
As a research tool	1	2	3	4	5	NA

TECHNICAL SUPPORT

Does your school have an on-site computer support specialist or technology coordinator?
Yes _____ No _____ Don't Know _____
If no or don't know, then skip this section and move on to the next section.
If yes, how many computer support specialists/coordinators does your school have? _____.
Are your specialists/coordinators Full time____ Part time_____ Don't know ____?

1= strongly disagree
2= disagree
3= neutral
4= agree
5= strongly agree

The on-site specialist/coordinator adequately assists me in problem solving and trouble shooting.	1	2	3	4	5
The on-site computer specialist/coordinator is dedicated to helping teachers.	1	2	3	4	5
I have adequate access to our on-site computer specialist/ coordinator.	1	2	3	4	5
I have to contact our specialist/coordinator several times before I get assistance.	1	2	3	4	5
Our computer specialist/coordinator shows me techniques to integrate computer technology into the classroom.	1	2	3	4	5

ATTITUDES TOWARDS COMPUTER USE

Directions: The following statements address general attitudes towards computer use. Please circle the one answer that best reflects your level of agreement.

1= strongly disagree
2= disagree
3= neutral
4= agree
5= strongly agree

I would like every student in my classes to have access to a computer.	1	2	3	4	5
Computer skills are essential to my students.	1	2	3	4	5
I feel tense when people start talking about computers.	1	2	3	4	5
I feel pressure from others to integrate the computer more into my classroom.	1	2	3	4	5
I would like my students to be able to use the computer more.	1	2	3	4	5
Computers are dehumanizing.	1	2	3	4	5
I avoid the computer whenever possible.	1	2	3	4	5
Computer instruction is just another fad.	1	2	3	4	5
The use of computers should be confined to computer courses.	1	2	3	4	5
I like using the computer to solve complex problems.	1	2	3	4	5
More training would increase my use of the computer in the classroom.	1	2	3	4	5
Computers diminish my role as a teacher.	1	2	3	4	5
Computers should be incorporated into the classroom curriculum.	1	2	3	4	5
Computers make my job easier.	1	2	3	4	5
Computers further the gap between students along socio-economic lines.	1	2	3	4	5
Computer skills will help me as a professional.	1	2	3	4	5
Learning computers make high demands on my professional time.	1	2	3	4	5
Computers change my role as a teacher.	1	2	3	4	5
I can help others solve computer problems.	1	2	3	4	5
Computers enhance classroom instruction.	1	2	3	4	5

Appendix F

Open-Ended Survey Questions

Instructions: The following items pertain to your responses on page 3 of the survey, in the sections entitled “Types of Software….” and “Integration of Computers…” Please respond to the following:

1) Briefly describe a lesson, activity, or project you conduct in your classes that incorporates the use of computer technology by students in class? Please use the back of the paper if needed.

2) How does the use of computer technology in this lesson, activity, or project enhance student learning? Please use the back of the paper if needed.

3) What is the most challenging aspect of implementing this lesson, activity, or project in your classes? Please use the back of the paper if needed.

- -

Detach here if you wish for your responses to remain anonymous

- -

Thank you for sharing information about your use of computer technology. A $50.00 gift certificate for Wal-Mart will be given to each of two randomly drawn participants who complete the information below upon returning their completed survey. The researcher would like to contact you for further details on your lesson, activity, or project described above. If you agree to be contacted you will be entered for a drawing to attend the Florida Educational Technology Conference in January, 2007. The winner will receive a district provided substitute teacher and paid registration fees and one night hotel to attend.

Your Name: _____ School: _____

Email Address: _____ Phone: _____

_____ Yes, you may contact me about my responses above

_____ No, please do not contact me about my responses above

Appendix G

Rater Categories Sheet

Rating Sheet Participant # ________

Reviewer/Coder # ____________

Directions: Read the participant responses and rate self-reported technology use the following categories.

Types of software used			Types of Integration	EnGauge 21st Century Skills Digital Age Literacy	NCSS Technology Standards/Position
By Teacher		By Students			
				____ Basic Literacy	____ Extend learning beyond what could be done without technology.
____	Word Processor	____	____ Small Group	____ Scientific Literacy	
____	Spreadsheets	____	____ Individual Instruction	____ Economic Literacy	
____	Databases	____	____ Cooperative Groups	____ Technological Literacy	____ Technology introduced in context.
____	Desktop/Publishing	____	____ As a reward	____ Visual Literacy	
____	Presentation software	____	____ Independent Learning	____ Information Literacy	
____	Web Publishing	____	____ To tutor	____ Multicultural Literacy	____ Opportunity for students to study relationships among science, technology, and society.
____	Graphics programs	____	____ To promote student centered learning	____ Global Awareness	
____	Drill & Practice	____	____ Research tool for students		
____	Games	____	____ Problem solving, decision making tool for students	____ Adapt/Manging	____ Fosters the development of the skills, knowledge, and participation as good citizens in a democratic society.
____	Simulations	____		____ Self-Direction	
____	Tutorials	____	____ Productivity Tool (charts, reports, other)	____ Curiosity	
____	Integrated Learning Systems	____	____ Classroom Presentations	____ Creativity/Risk Taking	
____	Web Browsers	____	____ Communications (email, discussion)	____ Higher Order Thinking	____ Contributes to the research and evaluation of social studies and technology.
____	Programming/Authoring	____			
____	GIS	____		____ Teaming/Collaboration	
				____ Interpersonal Skills	
				____ Personal Responsibility	
				____ Social/Civic Responsibility	
				____ Interactive Communct	
				____ Priotizg/Planning/Mang	
				____ Use of Real World Tools	
				____ Relevant/Quality	

Appendix H

Member Checking & Interview Script

Thank you for taking the time to meet with me today. Your willingness to share how you are using technology is valuable to the field. The reason for this meeting is to verify my understanding of the lesson you discussed in your written response on the technology survey.

1) I'd like to verify the software used in the lesson you conduct with your students. You reported that you use _____? (read off ratings checked by reviewers) Is this correct.

2) You reported that you integrate this technology in/for _____? Is this correct? (read off ratings checked by reviewers)

3) Other ways that you could integrate this technology include (Read off non-checked items). Do you use this lesson in any of these capacities?

4) There are a variety of skills that one can obtain that are part of living in the technology world of the 21st century. The following is a list of those 21st Century Skills. Your reported lesson was rated as incorporating the following skills? Is this correct? (Teachers will be given a copy of these definitions and descriptions of read these over the phone).

5) The National Council for the Social Studies (NCSS) has a position statement on effective uses of technology in the classroom. I have a few questions about how your lesson addresses some of NCSS technology standards:

    a. Does using this technology extend learning beyond what could be done without technology?

    b. In what context do you use this technology: How does the use of technology enhance students' knowledge of content? How does the use of technology enhance social studies skills?

    c. Do your students explore content that pertains to relationships among sciences and technology and society in this lesson?

    d. How might this lesson foster citizenship skills?

6) What textbook are you currently using? Does this text offer any support of computers or technology in the classroom? (If yes, please explain).

7) Is there anything else that you would like to share about the lesson?

8) Do you have a copy of the lesson instructions, handouts that you provide to your students, or sample work that you would like to

Appendix I

Teacher “A” Sample Project

Muslim Culture Brochure

Assignment
Create a travel brochure illustrating the accomplishments of the Muslim empire. Make sure to include the following topics:

- General Muslim culture
- Importance of Baghdad
- Role of Women
- Advancements in medicine, math, astronomy
- Art and literature

You may work with a partner or individually.

Grading Criteria:
1. Inclusion of all required topics (refer to the above list)
2. The use of at least ***two*** credible internet sources as discussed in class.
3. Provide citations in MLA format.
4. Cover page including a title and illustration
5. Brochure must be include 3 folds
6. The brochure must include both text and illustrations (at least one illustration per page). You may use draw your illustrations or use pictures from the internet (as long as you cite the source).
7. Make sure to use your own words for explanations.

NOTE:
Remember you are creating a brochure to attract people to come see the Muslim World. Make sure to be neat and organized. Make sure to color your illustrations. You will be graded on the completeness, accuracy and organization of your work.

DUE DATE: _____

Appendix J

Teacher "D" Sample Project

AP World History: Team Presentation Project

Instructions: You will be in teams of 4-5. You are to build a PowerPoint presentation that thoroughly discusses one of the topics listed below. Topics will be assigned. In, addition, each team is to provide a written summary of their topics as indicated.

1. History of Southeast Asia from 800 BCE to 1450 CE.

   Describe and analyze the impact if the Chinese on Southeast Asia from 800 BCE to 1450 CE. To what extent were cultural interchanges? Reciprocal?

2. History of Korea from 800 BCE to 1450 CE

   Describe and analyze the impact of Chinese on Korea from 800BCE to 1450 CE. To what extent were cultural interchanges reciprocal?

3. Voyages of Zheng He

   Describe and analyze the impact of the voyages of Zheng He on Asian-African trade and politics. To what extent is the Ming Dynasty's decision to end the voyages sympathetic to China's culture?

4. The Spice Islands (East Indies)

   Describe and analyze the role of the spice trade in global economics from 100 to 1450 CE. What role did various cultures play in either changing or continuing this trade throughout the centuries?

Specific Requirements:

PowerPoint Presentations:

1. No more than 14 slides
2. Logical order, cover all aspects of topics – thesis statement, chronology, PECS, CCOT
3. Speaking notes must be on Notes Pages
4. Save to flash drive

Written Summaries:

1. Typed, double spaced, Times New Roman
2. Turned in at time of presentation along with black and white copy of Notes Pages from presentation.
3. Type team names on front page of summary along with heading that indicates topics.
4. Save to flash drive.

Grading:

Presentation	50 points
Summary	50 points
Peer Evaluations	50 points

Appendix K

Teacher "F" Sample Project

Renaissance Brochure Directions

Background: The Renaissance begins in Italy at the close of the Middle Ages. It is called the "rebirth" because it is a time when there is an explosion of art, learning, and creativity.

Task: Imagine you and you partner are a time travel agents who are trying to convince the public to buy your latest "vacation" – a trip back in time to the period known as Renaissance. With a partner you will be assigned, you will create a tri-fold brochure that advertises the benefits of experiencing the Renaissance and highlights a special limited edition excursion that focuses on one element of life during this time period.

Requirements:

1. Title/cover pages – introduces the Renaissance and why one would travel to that time period
   (10 points)

2. Inside panel #1 – introduces your special excursion topic by describing the basic characteristics of this these during the Renaissance:
   (10 points)
   Art
   Architecture
   Literature
   Philosophy
   Politics/Government

3. Inside panel #2 and #3 - gives at least 3 specific examples of work that would be seen on a tour that focuses on your special topics. Must include a description and an illustration of each work.
   (30 points)

4. Back panel – includes a bibliography/works cites of each source you use to create your brochure. You must use at least 3 different sources.
   (10 points)

5. Brochure must be created using Microsoft Publisher

6. Spelling, grammar, publishing skills, presentation and creativity will be a factor in the final grade.

Appendix L

School District Approval to Collect Data

Hillsborough County
PUBLIC SCHOOLS
Excellence in Education

September 19, 2006

Mrs. Shelli Whitworth
[redacted]

Dear Mrs. Whitworth:

The Hillsborough County Public School district has agreed to participate in your research proposal, *Secondary World History Teachers' Integration of Technology into the Classroom: A Mixed-Method Approach.* A copy of this letter should be presented to the principal and participants in order to assure them your research has been approved by the district. **Approval is given, however, under the following conditions**:

1) Participation by the school, its teachers, students, or parents **is to be on a voluntary basis**. That is, **participation is not** mandatory and you must advise your participants that they are not obligated to participate in your study.

2) Confidentiality must be assured for all participants. That is, all data must be aggregated such that the district cannot be identified as well as any other participant including parents, students, and administrators.

3) Since you are an employee of the Hillsborough County Public School District, all work related to this survey must be done outside your normal working hours.

4) If this work is not part of your job, you can not use the school mail to send or receive the documents.

Please forward one copy of your completed study for our files.

Good luck with your endeavor. If you have any questions, please advise.

Sincerely,

John A. Hilderbrand, Ph.D., Director
Assessment and Accountability

JAH/mt

Raymond O. Shelton School Administrative Center • 901 East Kennedy Boulevard • Tampa, FL 33602 • Website: www.sdhc.k12.fl.us
School District Main Office: 813-272-4000 • P.O. Box 3408 • Tampa, FL 33601-3408
Assessment & Accountability • Phone: 813-272-4341 • Fax: 813-272-4341 • email: john.hilderbrand@sdhc.k12.fl.u8s

Appendix M

Exempt Certification IRB Approval

USF
UNIVERSITY OF
SOUTH FLORIDA

November 2, 2006

Shelli A. Whitworth, M.A.
[redacted]

RE: **Exempt Certification** for IRB#: 105166
Title: *Secondary World History Teachers' Integration of Technology into the Classroom: A Mixed-Method Approach*

Dear Ms. Whitworth:

On November 1, 2006, the Institutional Review Board (IRB) determined that your research **meets USF requirements and Federal Exemption criteria TWO (2).**

Please note the following: Research investigators are required to keep all research related materials, including all IRB correspondence for no less than three (3) years. If at the end of 3 years, the data is no longer needed it should be destroyed. However, if data are kept after 3 years of study completion, please report to the IRB how you will keep data confidential.. It is your responsibility to ensure that this research is conducted in a manner reported in your application and consistent with the ethical principles outlined in the Belmont Report and with USF IRB policies and procedures.

Please note that changes to this protocol may disqualify it from exempt status. It is your responsibility to notify the IRB prior to implementing any changes.

The Division of Research Integrity and Compliance will hold your exemption application for a period of five years from the date of this letter or for three years after a Final Progress Report is received. If you wish to continue this protocol beyond those periods, you will need to submit an Exemption Certification Request form at least 30 days before this exempt certification ends. If a Final Progress Report has not been received, the IRB will send you a reminder notice prior to end of the five year period; therefore, it is important that you keep your contact information current with the IRB Office. Should you complete this study prior to the end of the five-year period, you must submit a Final IRB Progress Report for review.

Please reference the above IRB protocol number in all correspondence to the IRB c/o the Division of Research Integrity and Compliance. In addition, we have enclosed an Institutional Review Board (IRB) Quick Reference Guide providing guidelines and resources to assist you in meeting your responsibilities when conducting human subjects research. **Please read this guide carefully.**

DIVISION OF RESEARCH COMPLIANCE
University of South Florida • 12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-5618

Appendix M Continued

Exempt Certification IRB Approval

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-9343.

Sincerely,

Paul G. Stiles, J.D., Ph.D., Chairperson
USF Institutional Review Board

Enclosures: IRB Quick Reference Guide

Cc: Angie Reagan, USF IRB Professional Staff
Michael J. Berson, Ph.D.

SB-EXEMPT-0602

Appendix N

Budget

Incentives	
2 gift cards at $50.00 each	$100
1 Registration fess to Florida Educational Technology Conference	$175.00
1 Night hotel stipend for conference attendance	$89.00
Copies	
Surveys, instructions, informed consent	$23.00
	Total: $387.00

About the Author

Shelli A. Whitworth is a doctoral candidate in Secondary Education, Curriculum and Instruction with cognate areas in instructional technology and educational leadership at the University of South Florida (USF) and an Instructor at Saint Leo University (SLU). She researches topics relating to effective use of technology to further students' knowledge of social studies through democratic education and historical literacy. She holds a Masters of Arts degree in Secondary Social Science Education and a Bachelors of Arts in Psychology. She instructs courses in general educational psychology, classroom management, middle and secondary curriculum/philosophy, and social sciences teaching methodology. She also mentors interns within local school districts. She served as Chair of the nationwide Graduate Student Special Interest Group of the College and University Faculty Assembly (CUFA). She was formerly an instructor at USF, and a social sciences teacher and Student Intervention Specialist in the School District of Hillsborough County, Tampa, Florida.