The purpose of this qualitative research study was to investigate student responses to a tech-integrated unit of literature study in a Middle School setting. The research question driving this study was, what are 7th grade student responses to a tech-integrated Language Arts unit of literature study? Through direct observation, student surveys, and teacher interviews, this study reported student responses to a tech-integrated unit of literature study that utilized Beverly Naidoo's young adult novel *Journey to Jo'Burg* as a centerpiece for instruction. Students in the class which participated in the study completed several tech-integrated activities over a five week unit time-frame that centered on Language Arts instruction at the 7th grade level (a directed online scavenger hunt, undirected online research, document creation in MS Word, a web quest, website development in MS Publisher). Data were reviewed throughout and at the end of the unit, using content-analysis and constant-comparison methods to determine recurring themes. A qualitative research software application was used to code and to arrange data transcribed into e-format by the principal researcher (NVIVO) for thematic discussion in Chapter Four of the thesis. Seven re-occurring themes emerged from the analysis of data: 1) Student Engagement with Tech-Integrated MGLA Curriculum, 2) Teacher Engagement with Tech-Integrated Units of LA Study, 3) Enhancing and Improving Critical Thinking Skills, 4) Evidence of Multiple Intelligences and Knowledge Sub-Domains, 5) English/Language Arts Competencies Development, 6) Student Digital Proficiency Development, and 7) Unit Challenges. Insight gleaned from this broad array of data underscores the importance technology can play in best practice tech-integrated MGLA instruction, and the overall positive response of students to tech-
integrated Middle Grades Language Arts curriculum. Lastly, the culminating projects of the students, their *Journey to Jo'Burg* websites, serve as intriguing visual models for tech-integrated presentation media from the 7th grades age group.
STUDENT RESPONSES TO TECHNOLOGY
INTEGRATION IN A 7th GRADE LITERATURE UNIT

by

THOMAS PERRINE WARREN

A thesis submitted to the Graduate Faculty
of North Carolina State University in partial fulfillment
of requirements for the Degree of Master of Science

MIDDLE GRADES LANGUAGE ARTS

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DEDICATION

For their indispensable and unwavering support across career changes and continued education, I wish to dedicate this thesis paper to my parents: Dr. William Thomas and Mrs. Christine Harlow Warren. Without their help, my efforts to develop would not nearly have been as successful as they have been.
BIOGRAPHY

Thomas Perrine Warren is a product of public and private education environments. Until high school, he attended public schools in upstate New York and in Colorado. Tom's high school years were spent at Durham Academy in Durham, NC, where he laid a foundation for academic pursuits, sports, work ethic, and community involvement. At Vanderbilt University in Nashville, TN, Tom discovered the value of a Liberal Arts education, majoring in Philosophy and English. In college, Tom continued to develop his grasp of Spanish that began in high school, honing it with friends and professionals alike during a summer internship in Mexico City, Mexico. Tom enjoyed being a member of the Club Lacrosse team and Kappa Sigma International Fraternity at Vandy.

Tom was hired by a multi-national natural product import/exporter after graduating from Vanderbilt, and enjoyed five years working in the private sector. He was fortunate to utilize his Spanish fluency to his company's advantage while working on assignment for extended periods of time in places such as The Dominican Republic, Nicaragua, Puerto Rico, and while traveling to countries like Argentina and Mexico. Tom spent an unusual expatriate work assignment of a year in The Philippines, and passed through Europe on sales visits. His culminating role with the company in their domestic headquarters' operations as an assistant plant manager was a hard-earned capstone to Tom's operations and sales career.

Deciding to focus his attention away from the anxiety of the private sector, Tom looked to a vocation which -throughout his life- friends, colleagues, and professionals would mention as what they envisioned him to be: a teacher. In the fall of 2002, Tom gained full-time employment at a local high school in Burlington, NC, as an English teacher. The next year, he worked as a full-time ESL teacher's Assistant in Durham, NC, at a Title I elementary. During this work
experience Tom decided to pursue an advanced degree in education. In the fall of 2004, Tom entered the Master's of Education in Middle Grades Language Arts program at NC State's College of Education in Raleigh, NC.

Two-and-a-half years of full-time graduate school later, Tom finds himself on the cusp of re-entering the education work-force, prepared with a Masters of Science in Middle Grades Language Arts. His thesis researched the complex relationship between technology and Middle Grades Language Arts instruction by answering the question: what are 7th grade student responses to a tech-integrated unit of literature study? Tom has been hired as an interim substitute at a local magnet middle school for the 2006-07 school year teaching 7th grade Language Arts and Social Studies. He is currently also finishing his last semester of classes and will graduate in December, 2006. Tom looks forward to working in the education field, and entertains plans to continue his education on a part-time basis towards a Ph. D..
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Chapter One - Introduction

Background

In a forward-looking move, the U.S. Census Bureau began to collect statistical data on technology integration into American society in the late 20th Century. The rate at which “households with a computer and Internet access” has grown in the United States since 1984 when the U.S. Census Bureau began collecting information on these population characteristics is impressive. In nineteen years, the category of “households with a computer” jumped from 8.2% in 1984, to 61.8% in 2003, the last year the Census Bureau conducted a national survey of the U.S. population. The information in “Computer and Internet Use in the United States: 2003” was released in an October, 2005 report by the U.S. Census Bureau (Davis, J., Day, J.C., & Janus, A.). The number of “households with a computer” increased between 2001 and 2003 by 5.5%; between 1998 and 2000, the number increased by 8.9% (Davis, et al., 2005). In 2003, slightly over 6-in-10 households in America had a computer.

Internet access in households across the U.S. has followed a similar increase during this time period. From 1997 to 2003, “households with Internet access” have increased from 18% to 54.7%; between 2001 and 2003, they increased 4.3% (Davis, et al., 2005). In 2003, slightly over half of the households in America reported Internet access. This trend reflects the continued 'plugging in' of households in America to technology and, consequently, more K-12 public education students plugged in at home. The statistics from the 2003 Census Bureau survey also describe the depth to which the ubiquity of technology extends in the U.S. today. The sample of the population with “children enrolled in grades K-12,” reported that 83.4% of these students use computers at home and 92.3% of these students reported computer use in their schooling. In other words, “among schoolchildren enrolled in kindergarten through 12th
grade (K–12), roughly 8-in-10 used a computer at home, and roughly 9-in-10 used a computer at school in 2003.” These data coincide with the fact that public schools report that 92.9% of K-12 students use computers (Davis, et al., 2005). According to the 2003 Census Bureau report, just about every student in K-12 education uses a computer for educational purposes. Survey participants in the 2003 U.S. Census Study report that “83% of children aged 3-to-17 with a computer at home used it to play games.” This was the most common use of the computer at home. The next most common uses were “school assignments (66%),” followed by “connecting to the Internet (64%)” (Davis, et al., 2005).

The survey reports that “children used a broader range of computer applications as they aged.” Although “playing games was the most frequent activity among the youngest children (85%),” as students become older, they report that they use computers more for “school assignments and accessing the Internet…(91% and 86%, respectively)” (Davis, et al., 2005). More results of the 2003 Census Bureau survey show that “children who accessed the Internet, whether at home, school, or elsewhere, most often used online connectivity to complete school assignments (75%).” The next two responses were “playing games (65 percent), followed by e-mail or instant messaging (60%)” (Davis, et al., 2005). The activities of schoolwork, email, and instant messaging make up a technology-integrated group of activities that students in public schools report they are actively engaged in using in their lives today.

In North Carolina, approximately 58% of households own a computer, and 52% have Internet access (Davis, et al., 2005). Slightly below the national average, in North Carolina roughly 6-in-10 households own a computer, while about half of the households have Internet access. Based on the 2003 U.S. Census Study national averages, computer use in the public schools of North Carolina should be somewhere close to or at 90%. Working back again from
the 2003 U.S. Census Study national averages, 75% of students should be using the Internet in
their work on school assignments.

The ubiquity of technology in the public, work, and educational spheres cannot be
ignored; technology is everywhere. From touch-screen ordering at fast food restaurants, to
wireless laptop carts in schools with broadband Internet access. From cellphones that allow text
messaging friends, to instant messaging while working at a desktop workstation (in school or the
office), technology affects all levels of society in the U.S..

At the middle grades language arts level (MGLA), what students are doing with
technology in their classroom covers a broad array of activities. The increase in popularity of
cutting-edge web or technology-based activities in MGLA classrooms include webquests; the
use of online dictionaries; online translation applications and online citation machines;
multimedia narrative authoring; and instantaneous online information resources. There are also
the more basic and standard technology-based activities that the middle grades age group learns,
such as word document creation, editing, and basic spreadsheet functions.

In North Carolina, there are specific Standards for the Course of Study (NC SCOS) that
link proficiencies in technology to other core-content areas such as language arts (North Carolina
Department of Public Instruction, 2004). Digital presentations are also now becoming more and
more within the grasp of middle schoolers who work with technology in their curriculum
(Coggeshall & Doherty, 2004; Lacina & Watson, 2004). In fact, the NC SCOS has in recent
years expanded to include technology-oriented goals across curriculum (North Carolina
Department of Public Instruction, 2004). This step is part of a more general oeuvre that attempts
to "identifies the essential knowledge and skills that all students need to be active, lifelong
learners in a technology intensive environment" (Department of Public Instruction, 2006).
Statement of Problem

Much of the existing research has focused on the effect technology has on the interest and attitudes of students in traditional core-content subject matter (Chen & McGrath, 2003; Funkhouser, 2002-03; Hand & Prain, 2003). Other research has investigated the relationships between the availability of technology resources at school and classroom levels with student use (Cabuck, Judge & Puckett, 2004; Norris, Poirot & Sullivan, 2003). Classroom-based research on technology integration at the middle grades level has focused on interesting activities and specific units or projects (Eagleton, Guinee, & Langlais, 2003; Insinnia & Skarecki, 2004). There are also many professional articles on the foregrounding conceptual framework for technology-integration, quality teachers, and Language Arts instruction, such as Pope and Golub’s, "Preparing Tomorrow's English Language Arts Teachers Today: Principles and Practices for Infusing Technology" (2000) and Mishra and Koehler's "Technological Pedagogical Content Knowledge: A New Framework for Teacher Knowledge" (2006). Given the wide net of research topics related to technology-integration and content instruction in public schools, there is a need for research to investigate the specific attitudes, preferences, and reactions of students to technology in the middle grades age group. One purpose of this descriptive study is to complement this extant body of literature.

In consideration of the ubiquity of technology in homes, at work, and the ever-increasing ways in which technology continues to affect everyday life and the education field, a relatively untouched area of research centers on the digital predisposition that students bring to the classroom as well as their outlook on the utility of technology as a resource in the classroom. Consistent with a student-centered approach to instruction, research needs to go to the source of
students’ studies in order to determine the essential impact technology has on them in the classroom with their learning. Although the body of research literature today focuses mainly on the availability of technology resources, the quality of such resources, and the best practice integration of technology into curriculum, more attention needs to be paid to what students already bring to the classroom with their digital proficiencies, and what students report the practical impact of technology to be in their day-to-day instruction.

**Research Question**

To address the gap in the research literature, this study investigated student's responses to and preferences with technology-integrated activities in an adequately tech-resourced MGLA classroom during a unit of novel study. This study researched a 7th grade MGLA class and their teacher at a local public school as they used technology to enhance the teaching and learning of Beverly Naidoo’s young adult novel, *Journey to Jo’Burg*. The research question driving this study was, what are 7th grade student responses to a tech-integrated Language Arts unit of literature study?

**Definitions**

The following list of abbreviations, acronyms, and terms occur frequently in this document:

**MGLA** – Middle Grades Language Arts taught between the 6–8 grade levels in public schools.

**LA** – Language Arts or the core-content subject of English at the Middle Grades level.

**SCOS** – A Standard Course of Study is the required learning objectives relevant to a given grade level and subject matter.

**NC SCOS** – The North Carolina Standard Course of Study that details the required learning objectives relevant to a given grade level and subject matter.

**MS** – Microsoft
IE – Internet Explorer

PP – PowerPoint

MIT – Multiple Intelligence Theory

TPCK – Technological Pedagogical Content Knowledge

PCK – Pedagogic Content Knowledge

E-format – electronic format
Chapter Two - Literature Review

Technology has ingrained itself so into in American society that emerging generations exhibit characteristics of what Marc Prensky identifies as the Digital Native personality (2002). Growing up with word-processing software applications, cellphones, PDA's, On-Star™, instant messaging, the Internet, home computers, online banking and the rest of the gamut of innovations that technology brings to people in these times, presents a student for public K-12 education that is almost always already versed in the nuances of input devices, editing techniques, menu navigation, and the general overall capacities of electronic computer applications (hardware or software). However, bringing this technologic capacity to bear in the form of effective, public school education in the core-content classroom is a challenge still to be ironed-out in most classrooms today. The following literature review aims to cover major trends that span the academic body of literature which include: (a) effective pedagogic strategies for core-content technology integration; (b) instructional best practice at the Middle School Language Arts level; and (c) the teacher's role within the tech-integrated public school classroom environment.

Public Schools and the Digital Age

The integration of technology into public school education has accelerated with the onset of the 21\textsuperscript{st} Century and the Digital Age (Barron, Harmes, Kalaydjian & Kemker, 2003). Since the early 1990’s one of the ongoing threads of discussion in the field of middle grades language arts has been the integration of technology into curriculum. Most MGLA teachers incorporate common, basic technologies into their instructional activities such as document creation, spreadsheet work, and Internet searches. “Computers, even simply used as word processors, make writing so much more viable for all students, but especially for struggling
students. They can draft, revise, edit and publish with such ease” (Rief, 2004, p. 50). These sorts of basic digital activities and the digital literacies that accompany them are commonplace and fundamental to a technology-infused MGLA curriculum and classroom of the 21st C..

Where learning that utilizes technology really takes off is when the “quality of the technology use” approaches “more sophisticated, intellectually complex applications” (Cabuck, Judge & Puckett, 2004, p. 384). From another angle, according to this study, technology that fosters critical thinking skills promotes learning on the part of student technology users.

Technology is no instant cure-all for the myriad of challenges that normally surface in MGLA classrooms in the U.S. (Templeton, 2004). Savvy MGLA teachers who hold an interest in staying abreast of the current technologic wave can improve their in-class instructional activities in a dynamic fashion that more standard and traditional methods of instruction fail to offer (Hand & Prain, 2003; Kajder, 2004). As Pope and Golub explain, "within our classes we can build the instructional scaffolds for students to advance as technology users while staying focused on teaching English language arts" (2000). The integration of technology into the MGLA curriculum and classroom may be a lynchpin that spurs students to want to learn (Chen & McGrath, 2003). Today, technology is an increasingly more common departure-point for content learning if students have access to technology resources in their classroom (Norris, Poirot & Sullivan, 2003).

Children born after the early to mid-1990’s in the U.S. have grown up surrounded by ubiquitous digital technologies they commonly regard as integral and indispensable parts of their ecologic environments. Drawing on terms from Marc Prensky (2002), Lacina and Watson have noted that “students in middle grades classrooms today are Digital Natives. There has never been a time in their lives when they were not surrounded by cell phones, video games, and the
Internet” (2004, p. 43). A stark contrast in perspective exists between the perceptions of the generation preceding today's youth and the current generation's view about how technology influences the individual's interactions with the environment. Examples of these changes in perception can be found in today's language. Literacy expands to include "words such as windows, files, menu, and mouse…such prefixes as cyber, e-, and hyper…such terms as dot com, url, and www" (Pope & Golub, 2000). Many researchers and professionals argue, as do Pope and Golub, that "these vast lexicon changes reflect not only a vocabulary shift but also a thinking shift" (2000). The impact of technology on the ways in which people communicate, think, know, and learn, is considered by researchers and academics in a serious fashion (Mishra & Koehler, 2006).

This phenomenon is also evident in the home. During the 1990’s in the U.S., home computer owners exploded in number. Many homes today have a desktop for family use, especially if the family has children. Since the early 1990's, the market for these items has reduced in price to the point at which a stocked home desktop can be purchased now for under $600.00 U.S. (Dell Home Systems Desktops, 2005). As prices fall, more and better technology becomes available to family and education consumers alike. The U.S. Census Bureau, in a 2001 press report regarding “Home Computers and Internet Use in the United States: August 2000,” state that “more than 4-in-5 households with computers had at least one member using the Internet at home (44 million households)” (Newberger). Many of today’s generation of adolescents have never been out of touch with just-in-time information, and for some youth today, disconnect from the technological umbilical cord is an unacceptable way of living. Change on a massive scale throughout our society as a result of the ubiquity of technology is a certain truth of our environments today. From home to work to the classroom, technology has
been infused into the daily lives of many in the nation. Teachers are expected to integrate and to utilize technology in diverse, core-content instructional manners (Pope & Golub, 2000). Many states and school districts require students to learn about different technologies as part of their state curriculum and standards. North Carolina requires in its SCOS that middle school students are “active users and creators of media/technology. Communication media and technology can include television, videotapes, radio, film, and computers. Students can access and use a full range of electronic media that can enrich other communication strands - reading/literature, writing, speaking/listening” (North Carolina Standard Course of Study, Grades 6-8, Language Arts, 2004). The MGLA North Carolina SCOS describes target middle school digital proficiencies and skills sets in detail:

For example, students can access Internet and CD-ROM technology in reading and research; they can construct and incorporate visual and audio enrichment such as multi-media presentations, charts, graphs, video clips, audio clips, and photographs into their written and oral communications. They can construct web pages, produce documentaries, or participate in video/audio conferences with peers or experts in other states, even other countries. Middle school students should learn how to evaluate media/technology. They should also be able to create and use media/technology themselves. Learning how to use media/technology thoughtfully is best accomplished by integrating the use of media with reading, writing, and speaking/listening so that students learn how effective communication constantly incorporates media for specific purposes and effects. Again, students will create and evaluate media/technology in all environments-expressive, informational, critical, argumentative, literary, and language usage (North Carolina Standard Course of Study, Grades 6-8, Language Arts, 2004).
Of particular importance in the standards is the fact that at the end, the authors repeated their expectation that technology [should] permeate the entire MGLA classroom's instructional activities. This depth of technology integration is consistent with Pope and Golub's "First Principle" of "Introducing and Infusing Technology in Context" within the English Language Arts classroom. Pope and Golub maintain that, "technology should be a naturally supporting background for both the content and the pedagogical content knowledge (Shulman, 1987) of English language arts" (2000; Mishra & Koehler, 2006).

One of many potential givens in education is the practical concern of if a resource is available for use. Without the hardware and software in schools and (MGLA) classrooms, students cannot benefit from the potential for learning that technology brings. Even in a basic or average tech-integrated (MGLA) classroom, the ability to incorporate visual images and digital pictures into standard instructional activities, opens up a broad range of novel document creation and writing for students. Pope and Golub describe the "Internet, hypertext documents…web sites, bibliographies with url addresses, e-mail, and personal web sites (visual representations of ourselves and our work) all are different kinds of texts, different genres with their own emerging characteristics" (2000). Furthermore, "English language arts teacher[s]…need to address these literacy shifts, varying text forms, and the attendant skills …[needed] to both use and teach these new texts and languages" (Pope & Golub, 2000).

Broadband Internet access is another resource that must be available to schools and students. It is fair to say that some public schools in the U.S. today possess computer labs; various types of computers in those labs (Mac and IBM); some sort of presentation hardware (projectors); laptops or a laptop cart; a room devoted to presentations with a sound system, projector, and large screen; various software applications that cover document creation,
spreadsheet work, digital photo manipulation, web design, and digital and audio recording and editing software; apart from broadband Internet access if the school is not already wireless (Barron, et al., 2003; Cabuck, et al., 2004; Norris, et al., 2003). If these sorts of technology resources are not available, teachers work with those that are at their disposal. Pope and Golub describe the necessity "for our soon-to-be-teachers to both witness and understand the diverse accessibility to technology their school and their students will have. And they must consider this variability in their class assignments, opportunities for use in the school day, and homework expectations" (2000).

Activities for students who find themselves in MGLA classrooms that have technology resources at their disposal, offer cutting edge potential for student expression. Students in a tech-integrated MGLA classroom are no longer bound by pen-and-paper, hard-copy, card-catalogued systems of information. These older, more traditional systems of information have been supplanted by the gamut of digital information available on the Internet and the development of new software applications that permit students with dynamic multimedia modes of expression. Pope and Golub note that in a tech-integrated classroom, "students participate actively and directly in their own education. They will not rely solely on the teacher but will use the Internet and electronic tools and media to gather information and gain insights" (2000). Today students can create electronic documents and presentations that at the least incorporate digital images and text. At the best this emerging form of e-document can meld auditory and visual modes of expression into one digital statement, all-the-while corralling student interest into the writing process via the integrated use of technological tools (Chen & McGrath, 2003; Insinnia & Skarecki, 2004).
Digital Literacy at the Middle School Level

MGLA teachers are likely candidates for utilizing emerging technologies in the classroom (Antinarella & Wolfe, 1997; Wilhelm, 2004). Pope and Golub describe the situation: As English language arts teacher educators, it is our role to prepare English language arts teachers today who will be the classroom and school leaders of tomorrow. These new teachers must be ready to step into the status quo as well as to advance the profession by infusing technology into their teaching. If we want new English language arts teachers who can accomplish this feat, we as their teacher educators must be models of that process" (2000). At an average level, students in the MGLA classroom should be able to create e-documents on their own. This process covers inputting information, and editing and revising appropriately for the grade level target Language Arts proficiency. A facile understanding of word processing software is a realistic expectation for standard student performance in many MGLA classrooms today. With the growing ubiquity of personal home computers, many students enter the MGLA classroom close to proficiency in such digital skills (Insinnia & Skarecki, 2004; Eagleton, et al., 2003). Accordingly, English Language Arts teachers must also be proficient with such and other digital skill sets (Pope & Golub, 2000).

Email, chat, and text messaging are three digital skill sets that many adolescents use in their personal lives (Insinnia & Skarecki, 2004). In fact, many middle grades students are better versed in the nuances of using emerging technologies than their adult counterparts (Insinnia & Skarecki, 2004; Eagleton, et al., 2003). A growing number of middle grades students develop digital skill proficiencies beyond the common technologic instruments in personal lives today such as email, chat, and text messaging, with other more complex technologic applications that complete tasks such as web design and video/audio editing.
In order to keep up with the emerging standards of digital literacy in the world today, it makes practical sense to develop digital skill sets in the MGLA classroom whenever appropriate and possible (Pope & Golub, 2000; Mishra & Koehler, 2006). Support for practicing digital skill sets include the fact that: (a) the 1990’s and early 21st C. historically demonstrate that digital skill sets and digital literacy are becoming more central to work and home life in America; (b) multimedia software applications offer rich and diverse means for student expression that traditional language arts educational activities such as book reports and papers do not (Chen & McGrath, 2003; Coggeshall & Doherty, 2004; Eagleton, et al., 2003); (c) adolescents today arrive in the MGLA classroom adequately prepared to use emerging software and hardware technologies because of the ubiquity of home and handheld computing devices, coupled with the use of these devices in the personal lives of today’s young adults (Insinnia & Skarecki, 2004); (d) students are more excited to work with technology over more traditional pen-and-paper based instructional tools (Hand & Prain, 2003; Lacina & Watson, 2004).

Multiple Intelligences, Knowledge Sub-Domains, and Technology

Howard Gardner’s *Frames of Mind, The Theory of Multiple Intelligences* proposes a useful paradigm in which intelligence assumes a broader meaning than it specifically occupies in standard IQ-based psychometric models of the mind. Since the publication of Gardner’s text in 1983, technology has expanded and improved dramatically; accordingly, the impact of technology in education has become more significant since this time. Therefore, the impact of technology on education has also filtered into teaching and learning (Pope & Golub, 2000). Some researchers have proposed separate sub-domains of knowledges specifically tied to the integration of technology into content-instruction in the classroom (Mishra & Koehler, 2006). Mishra and Koehler's Technological Pedagogic Content Knowledge conceptual model is a
framework within which one can analyze the various impacts technology has on the teacher, the learner, and their environment: the classroom. One of the main ingredients in TPCK is the concept of intelligence and the knowledge that accompanies it. There are many ways in which the impact of technology on education affects the nature of intelligence and knowledge. Mishra and Koehler examine the specific relationship and impact technology has on the notion of knowledge and intelligence in education in general (2006).

Similar to Pope & Golub's strategies and guidelines for quality tech integration into content-instruction (2000), Mishra and Koehler propose a conceptual framework that breaks down the relationships within the triptych of "Content, Pedagogic, and Technologic" knowledge (2006). Mishra and Koehler explain that "at the heart of PCK is the manner in which subject matter is transformed for teaching. This occurs when the teacher interprets the subject matter, finding different ways to represent it and make it accessible to learners" (2006). The "Pedagogic Content Knowledge" a teacher possesses is directly affected by their knowledge of technology (Mishra & Koehler, 2006). Mishra and Koehler envision technology to function in the classroom in a manner that permits novel content delivery according to the particular fashion in which the technology at hand works. Their view on the role of technology in the classroom is highly integrated. Mishra and Koehler explain that "our model of technology integration in teaching and learning argues that developing good content requires a thoughtful interweaving [of] all three key sources of knowledge — technology, pedagogy and content." They further claim that "the core of our argument is that there is no single technological solution that applies for every teacher, every course, or every view of teaching" (Mishra & Koehler, 2006). Much in the same way Gardner establishes a conceptual framework for a broader understanding of intelligence, Mishra and Koehler expand the relationships between "Pedagogy, Content, and Technology" to
encompass sub-domains of knowledge that teachers must master in order to integrate effectively
technology into their instructional practices (2006).

Gardner’s description of intelligence is broad in scope, but specific within the nature of
each of the seven core intelligences he posits. Gardner maintains that there are “Linguistic,
Musical, Logical-Mathematical, Spatial, Bodily-Kinesthetic,” and “Personal (Inter- and Intra-
Personal”) intelligences. Gardner expands on how he sees intelligence appear in general: "to the
extent that it can be found in relative isolation in special populations (or absent in isolation in
otherwise normal populations)” (Gardner, 1983, p. 9). Gardner refines his view of intelligence
by stating “that it may become highly developed in specific individuals or in specific cultures;
and to the extent that psychometricians, experimental researches, and/or experts in particular
disciplines can posit core abilities that, in effect, define the intelligence” (Gardner, 1983, p. 9).
Gardner asserts that “in ordinary life…these intelligences typically work in harmony, and so
their autonomy may be invisible. But when the appropriate observational lenses are donned, the
peculiar nature of each intelligence emerges with sufficient (and often surprising) clarity”
(Gardner, 1983, p. 9).

This brief explanation of Gardner’s vision of intelligence describes a “plastic” or
dynamic nature of intelligence, in effect casting intelligence as something that can continue to
develop in response to the proper events and environment (Gardner, 1983). Other researchers
have also advanced a dynamic view of knowledge bases and conceptual frameworks that
accompany the forms of intelligences emergent in the modern classroom because of the impact
of current technologies on education (Pope & Golub, 2000; Mishra & Koehler, 2006).
According to Gardner, there are distinct manners in which the varying compass-points of his
Multiple Intelligence Theory (MIT) develop. Furthermore, most of these capacities are well-
developed in well-rounded individuals, but Gardner adds that most “intelligent” people are highly proficient in only one or maybe two of the core intelligences. For example, mathematicians are highly-developed in the Logical-Mathematical intelligence, poets in Linguistic intelligence, Athletes in Bodily-Kinesthetic, and so on (Gardner, 1983).

One crucial issue at stake that Gardner touches on in the development of MIT, is the diagnostic role it could play for individuals entering educational environments (1983). Gardner writes that he envisions MIT to provide the framework for an intelligence diagnostic that might “identify an individual's intellectual profile (or proclivities) at an early age and then draw upon this knowledge to enhance that person’s educational opportunities and options” (Gardner, 1983, p. 10). Gardner continues that “one could channel individuals with unusual talents into special programs, even as one could devise prosthetics and special enrichment programs for individuals presenting an atypical or a dysfunctional profile of intellectual competences” (Gardner, 1983, p. 10).

The most common prosthetic to integrate into the education climate since 1983 is the computer. From Gardner’s MIT perspective, the computer, and in a broader sense, technology in general, is an instrument or a tool with which educators can enhance the education process. Gardner maintains that technology assists in the development of various intelligences (Gardner, 1983, p. 364). He also warns of “technical aids” leaving “the individual less well prepared to rely on [their] own abilities.” Specifically, Gardner mentions that people who work in “videographics or in spatial reasoning…[rely] on still other forms of intelligence” (Gardner, 1983, p. 364). From an MIT outlook, the use of technology permits the development of certain intelligences such as Linguistic, Logical-Mathematical, Spatial, and Musical. Technology integration is a recognized and encouraged element of Gardner’s MIT paradigm (1983).
MGLA Inquiry-Based Learning and Technology

The opportunities for inquiry-based methods of learning improve and expand with the integration of the gamut of online information easily found and arranged now on the Internet. Two critical components of any research-based inquiry (reflection on the source of the information and the authorial intent for that piece of information’s existence on the net) are practiced often in inquiry-based instructional activities that utilize the Internet as an informational resource (Harste, 2003; Mitchell & Tchudi, 1999). The structural arrangement of information on the Internet naturally includes a broad array of files that will continue to expand and to grow. From picture images, songs, video clips to documents, the scope of individual expression expands with access to the Internet coupled with the proficiency in using current software applications (Cabuck, Judge & Puckett, 2004). It is not enough solely to have access to the Internet as an information resource, students must be able to utilize current technology (multimedia software applications and hardware) to their authorial advantage.

In describing the climate of the tech-supported classroom, one researcher, Sara Kajder, writes that “schools are beginning to support teachers’ work by hiring instructional technology specialists or additional media specialists who work as advisors or teammates during technology-infused projects” (2004, p. 7). She maintains that today “…teachers need to work as instructional designers” (Kajder, 2004, p. 7). This approach supports collaborative learning with the appropriate instructional tools available, given the resources of the particular classroom or school. Previous researchers have also identified the role of the teacher in a tech-integrated classroom as more of a guide or instructional designer (Pope & Golub, 2000).
Today “we live in an age that demands technological and visual literacies alongside strong skills in reading and writing. Students must be effective communicators” (Kajder, 2004, p. 6). To support the need to develop effective communicators, Kadjer suggests that tech-savvy MGLA teachers need “to develop both our digital literacies and those of our students” (Kajder, 2004, p. 7). The goal of best practice instruction now is “to construct challenging curriculum and standards-based activities that effectively integrate technology into English instruction” (Kajder, 2004, p. 7). Student-centered, inquiry-based, collaborative learning activities that utilize available technologies are becoming more popular in MGLA classrooms today (Harste, 2003; Lacina & Watson, 2004). These types of learning activities normally capture student interest in a way that traditional pen-and-paper or textbook-and-lecture instructional approaches do not (Eagleton, Guinee & Langlais, 2003; Insinnia & Skarecki, 2004). Inquiry-based, collaborative learning activities can take advantage of technology as a departure-point for the learning process.

Inquiry-based, student-centered, collaborative instructional methods founded on emerging digital technologies, can promote higher-functioning cognitive assessments by focusing on the question, “what is the purpose of this [online] information I am examining now?” (Harste, 2003). To this end, some educators, such as Jeffrey Wilhelm, note good websites that assist students in the evaluation of the information they encounter on the Web (Wilhelm, 2004). Additionally, digital literacy demands include kinesthetic and tactile skill proficiencies (hand-eye coordination); consideration of the authorial intent and identity of information posted on the Net (Harste, 2003, p. 9); effective presentation techniques and strategies (Coggeshall & Doherty, 2004, p. 26); as well as traditional core-content knowledge
retention. Today literacy takes on a broader connotative meaning than it did prior to the advent of the Internet and its accompanying methods of information presentation (Pope & Golub, 2000).  

**Tech-Savvy MGLA Teachers**

Wise and effective MGLA teachers take advantage of the connections that technology permits throughout the world’s environment and integrate into the classroom instructional activities that show how technology impacts the varying spheres of the student’s immediate learning environment (Muuss, 1996, p. 322-333). From the macro- on down to the micro-system levels of Bronfenbrenner’s system of psychological development, there is no disputing that the Internet and computers have a high degree of impact on the students’ educational experience (Muuss, 1996, p. 322-333).

Psychological development theorists such as Bronfenbrenner offer a holistic perspective on the impact that change can have for the individual and the larger societal group of which the individual is a part. Bronfenbrenner’s psychological development system incorporates a ‘trickle-down’ and ‘trickle-up’ function that allows for changes in the particular immediate environment (macro or micro) to affect the rest of the ecologic system at large (Muuss, 1996). The pervasive and ubiquitous structure of technology in U.S. society today may support Bronfenbrenner's contention of the interconnectedness of the various portions of the environment in which people live. Bronfenbrenner’s theory emphasizes this interconnectedness of various pieces of the individual’s environment (Muuss, 1996). The system includes strata from the individual’s most immediate and intimate surroundings on up to the most general and over-arching systems of which the individual is a part in a given society. Bronfenbrenner's theory maintains that technology affects every level of his stratified ecologic environment (Muuss, 1996).
Consider the widespread dissemination of information about any subject that can be found on the Internet today. Prior to the Internet, there were no instantaneous methods for researching information on a given topic. In fact, there is such an abundance of information on the Internet that currently, “71% of adult Web users experience frustration when searching, and that the average Internet user feels discouraged after only 12 minutes of searching (IDC, 2001),” (Eagleton, et al., 2003, p. 28). This fact is of major concern to educators, researchers, and theorists. In the classroom, technological realities of the world such as the overabundance of information on the Internet, spur language arts teachers into roles more in line with Kajder’s notion of an “instructional designer” (2004, p. 7). Effective, tech-savvy, successful MGLA teachers may integrate digital research and presentational technologies into their instructional method in practical and proficient manners (Mishra & Koehler, 2006). They do not permit their students to flounder on the sea of information available on the Internet (Pope & Golub, 2000). Apart from this feature of the 21st Century, effective MGLA teacher, the culture of the tech-integrated teacher's classroom can be significantly different from non tech-integrated learning environments. In light of the consideration that students prefer to work with technology over other, more traditional instructional tools (Insinnia & Skarecki, 2004; Norris, et al., 2003), the contrast in classroom cultures between tech-integrated and non tech-integrated classrooms could be significant in terms of learner willingness and student motivation.

The appropriately integrated use of technology in the MGLA classroom’s curriculum is an element of classroom culture that students normally enjoy and includes a skill at which they tend to be proficient (Insinnia & Skarecki, 2004). A MGLA classroom where the opportunity does not exist to use technology in the curriculum harkens back to the not-so-far-gone days where pen-and-paper were the only tools needed to write. In today’s environment, creating
narratives based on images or images and sign are close to the forefront of creative expression. Technology permits these narratives to emerge and thus begs to be integrated into the effective MGLA teacher’s curriculum (Mitchell & Tchudi, 1999). Most research supports the fact that technology is not the sole answer to any education problems. Technology is an instructional tool to aid students’ engagement and learning (Pope & Golub, 2000; Mishra & Koehler, 2006). Classrooms that integrate technology into the daily instructional routine are utilizing and developing emerging digital literacies that promote critical cognitive development in novel digital manners (Coggeshall & Doherty, 2004; Insinnia & Skarecki, 2004).

The tech-savvy, effective MGLA teacher’s classroom is a site for a diverse body of empowered learners, on both the teacher and student sides of the population equation. Coggeshall and Doherty identify a portion of educators today as “technologically frustrated” (2004, p. 23). These are the teachers who do not have sufficient technologic resources at their disposal in their schools. From this perspective, the impact of technology on developing learners is a purely resource-determined matter: if the computers are available, then students and teachers alike can use them for instructional activities.

Many schools today have computer labs, one or more computers in their classrooms, a mobile cart of laptops that connect to a wireless broadband network for the school, and even digital projectors for in-class instruction. Even though the allocation of resources continues to be a problem in the public school classroom, tech-savvy MGLA teachers more-and-more have a greater number of tech-resources of which to take advantage in their schools. Since a majority of the country’s population has a home computer with some form of online access (Newberger, 2001), it makes sense to complement the use of these skills at home in school. On the education side of this equation, “99% of U.S. public schools report Internet access, 85% of those with
high-speed Internet access (National Center for Education Statistics, 2002)” (Eagleton, et al., 2003, p. 28), which opens the door for tech-integration across the curriculum.

However, the distribution of technology at the school level often remains unclear, even in light of the high percentage of schools that report the use of these technologic resources. In fact, studies indicate that in 2000, “47.4%” of classrooms surveyed indicated that they possessed “1 classroom computer.” The second largest group of classrooms with computers reported that they had between “2-5 computers,” at “28.5%” of classrooms surveyed (Norris, et al., 2003). Clearly, the classroom has developed in terms of technology resources in the past decade. The integration of current technologies into daily instructional routine is a basis for producing the next generation of employees for the 21st century workforce. In the Information Age, “students who cannot find relevant information quick will be disadvantaged” (Eagleton, et al., 2003, p. 28). The fact that technology in our society is everywhere, shifts the work of producing literate individuals in the Information Age from merely possessing knowledge or information, to being able to find, to digest, and to represent effectively the ubiquitous knowledge or information found throughout our society (Eagleton, et al., 2003). In the tech-savvy lead teacher's classroom, students can practice digital literacies that will better equip them to function in the 21st century digital world.

Technology and Best Practice in the MGLA Classroom, Part I

Critical Information Evaluation in School and Society

Jerome Harste maintains that “a good language arts program for the 21st century continues to be comprised of three components- -meaning making, language study, and inquiry-based learning” (2003, p. 8). Harste explains that “students are going to continue to have lots and lots of opportunities to mean, not only in the form of reading and writing, but also in the
form of visual-text literacies” (2003, p. 8-9). Visual-text literacies are exactly what the compound phrase conjoins: images and text (think of video games or multimedia presentations that utilize pictures and words to convey meaning). Harste describes an open-minded approach to 21st C. literacy development:

While what materials we read is an issue, even more of an issue is what social practices we institute around our discussion of books...we need to teach in such a way that students enjoy literature and at the same time come to see that language is never innocent. ‘Whose story is this?’ ‘What would the story look like if it had been told by someone very different (in terms of race, gender, age, etc.) from the current author?’ ‘What is being taken for granted and what other ways are there to think about this thing being discussed?’” (Harste, 2003, p. 9). This type of inquiry-based reflection on information presented to individuals in today’s society is a departure point for developing critical thinking skills and the critical faculty of individual thought in general.

In today’s society, from Harste and Prensky's perspectives, the disadvantaged simply read information and take it for truth (Harste, 2003; Prensky, 2002). Informed, literate, critical readers decode information on a variety of levels, not just on the level that the particular symbol conveys content meaning. Literate consumers of information today “know how to use art, music, drama, etc., to reposition themselves, gather information, change perspectives, re-theorize issues, and take thoughtful new social action” (Harste, 2004, p. 11). Harste summarizes that the goal of education as he sees it, is to produce “critically literate beings who know how language works and can use it to make meaning and reposition themselves in the world in a more democratically thoughtful and equitable manner” (2004, p. 11). In fact, integrated technology practices in daily instructional technique can logically support the student’s potential for
reaching this informed 21st century perspective (Pope & Golub, 2000; Mishra & Koehler, 2006). Practicing digital proficiencies in the classroom is a required dimension of MGLA core-content instruction in North Carolina.

**Tech-Integrated Instructional Planning**

A quality example of a student-centered, inquiry-based instructional activity that integrates technology into the Middle Grades Language Arts curriculum is Eagleton, Guinee, and Langlais’ “Hero Project” (2003). One of the major objectives of this project was the broad goal of teaching students “how to find information efficiently on the Internet” (Eagleton, et al., 2003, p. 28). To this end, teachers created “a six-week Internet inquiry unit in which eighth graders were required to use both print and Internet resources to research a personal hero, and then present their findings via two formats of their choosing (e.g., slide show, poster, impersonation)” (Eagleton, et al., 2003, p. 28). This kind of open-ended research project aims “to create tools and materials in which the content, means of expression, and balance of support and challenge are customizable to support individual learners” (Eagleton, et al., 2003, p. 28).

The study reports that at the end of the unit, a few members of the class ran into problems demonstrating that learning had actually occurred. For example, making a collage without any text captions about the hero did not demonstrate that adequate learning had taken place on the part of the student. Also, high-ended multimedia presentations did not whistle or ring their bells into high marks” (Eagleton, et al., 2003). The teachers in this project focused on determining if authentic learning had occurred on the part of the student in the format of the final presentation.

When it came time for students to present their work, the teachers “found it wise to have students practice their presentations ahead of time, particularly digital formats that had to
be preloaded” (Eagleton, et al., 2003, p. 34). Ultimately, these teachers reflected on their “Hero Inquiry Project” that “searching the Internet for relevant information is a challenging literacy task for anyone” (Eagleton, et al., 2003, p. 34). They continue that “it involves choosing topics, setting goals, asking questions, applying search strategies, selecting keywords, analyzing search results, evaluating Web site relevancy, documenting sources, note taking, synthesizing, transforming, and presenting findings” (Eagleton, et al., 2003, p. 34). These skill sets rely on critical thinking proficiencies as well as research skills for effective use. “The Hero Inquiry Project” is a quality example of the emerging digital literacies and skill proficiencies that effective, tech-savvy, successful English teachers can be using to instruct in their classrooms.

The “Hero Inquiry Project” demonstrates best practice tech-integration in the MGLA classroom for several reasons: (a) the unit is student-centered; (b) the unit is collaborative in activity composition (i.e., it utilizes group and individual work); (c) the unit incorporates traditional methods of instruction and newer, technology-based learning activities (scaffolded instruction); (d) the use of technology is a central element utilized as a departure point for learning throughout the course of the unit. This approach to an MGLA unit plan squares with the NC SCOS’s guidelines for this grade level in respect to the integration of technology (North Carolina Standard Course of Study, Grades 6-8, Language Arts, 2004). The “Hero Inquiry Project” demonstrates to teachers the ability to integrate flexibly technology into curriculum in order to model the potential of such media for students themselves. Modeling instructional practice is an important part of any core-content subject. Since MGLA teachers proficient in the use of these technologies directed the unit, students who were at less developed stages of technical skill had available help from tech-savvy teachers in order to scaffold learning towards improvement of student digital literacies and proficiencies.
Technology and Best Practice in the MGLA Classroom, Part II

Technologic Literacy Today

It is important to bear in mind with technologic advancement that digital literacies are extensions of those found in classic, traditional types of skills and proficiencies. In other words, knowledge and intelligence are cumulative artifacts that increase as various critical proficiencies develop (Gardner, 1983; Mishra & Koehler, 2006). Critical thinking arises from the practice of different skill sets, from the development of basic proficiencies on as the individual develops the scope of their cognitive faculties. Technology impacts to such a degree the manner in which information is presented and conveyed to people today, that overlooking the manner in which it does so would be to overlook perhaps the most significant effect technology has on the world and the way in which we live in it today (Pope & Golub, 2000; Mishra & Koehler, 2006). The practice of reading in an informed manner, of considering authorial intent, context, audience, history, and message take on fresh significance in the new multimedia dress of the Digital Age. Just as in the act of reading, the act of writing today in the classroom needs to take advantage of technology in order to improve the writing process itself (Pope & Golub, 2000). “The Hero Inquiry Project” is a model of how the new dress of these traditional literacies looks in a tech-integrated unit plan.

Discussion and literature within the field of MGLA education today document the positive impact technology has on learners, the classroom culture and environment. Simply making the jump from a non-technology supported learning environment to a technology-supported learning environment is a transition that can excite both students and educators alike (Muuss, 1996, p. 322-333).
A common theme in tech-integrated instructional activities is that these experiences “help us to better perceive and understand our world through our engagement” in that activity (Coggeshall & Doherty, 2004, p. 23). This outlook on the nature of the world in which we live aligns with Bronfenbrenner’s holistic perspective on psychological development. When one feature of the ecologic environment shifts, another element of the environment shifts as well, because of the interconnectedness of the system (Muuss, 1996). Accordingly, when technology advances to provide users with a new manner in which to present information, the accompanying digital skill sets required to create information in the new format expands to include proficiency with the next technology.

In one tech-integrated unit for example, a 7th grade literacy team set up a multi-pronged approach to promoting literacy through utilizing computers in the computer lab and classroom. “Knowing that students seemed to get much more excited about working on computers than working out of a book, [one teacher] set up lessons on the Internet designed to activate prior knowledge” about imminent subjects of study (Coggeshall & Doherty, 2004). This team’s approach to scaffolding information available on the Internet for their students to read at the beginning of a new unit or mini-lesson was technology-based.

Another tech-based activity that this team used in their unit was PowerPoint. PowerPoint addresses such key proficiencies as “organizational skills,” “thinking in bullets,” and addressing your idea to an audience” (Coggeshall & Doherty, 2004, p. 26). These critical and Language Arts skills sets can also be tied to the NC SCOS (North Carolina Standard Course of Study, Grades 6-8, Language Arts, 2004). In Coggeshall and Doherty’s unit, after the presentations were shown to the class, student interest in reading other books took on a new level
of enthusiasm, since students could visualize in a much more detailed fashion the content of other peers’ selections for book reports (2004).

*Online Information Now*

In the Digital Age, information can be as omnipresent as a hand-held online connectable device is away. Although this level of technology may seem like science fiction, the classroom of the future may contain a suitable piece of capable hardware for every student. Fortunately for today, any kind of Internet connectivity permits access to quality online educational websites such as Inspiration, NoteTracker, (Eagleton, et al., 2003), Purdue’s Online Writing Lab (OWL), www.gutenber.org, www.bibilomania.com, www.volcano.com (Insinnia & Skarecki, 2004, p. 12), and David Warlick’s Citation Machine and Son of Citation Machine (Warlick, 2006).

Besides the appeal of technology to emerging adolescents, the scope and ease with which information can be accessed and represented from the Internet is a huge advantage to continued work with the digital medium. The quality and quantity of images and documents on the Net can only continue to expand and to develop in time. In one MGLA unit study about reading background information on *A Tale of Two Cities*, students had to perform a non-digital search for salient information on the topic, and as the teacher notes, “they had to spend a week in the library searching for and hand copying a small fraction of the information we now find and share on the Internet in 20 minutes!” (Insinnia & Skarecki, 2004, p. 13). Furthermore, “these kids love the computer screen and when asked about reading on the screen, they unabashedly reply, ‘It’s not really reading; it’s fun!’” (Insinnia & Skarecki, 2004, p. 13). One particular digital proficiency that these students demonstrate is the ability to multi-task when they have
Technology Permits Uncommon Learning Arrangements

Technology changes over time, and this means that as technology changes, so will its use in the classroom. The dynamic nature of technology use in the classroom can create unusual conditions for learning, or even enhance them for particular students. One example of a study that examined these sorts of uncommon learning arrangements is Insinnia and Skarecki’s *Power Chatting: Lessons for Success* (2004).

Insinnia and Skarecki’s case study regarding the use of chat rooms in the MGLA classroom is an unusual example of a student’s participation in an in-class activity from home. They describe the event: “while we were in the chat room that day, a girl who was absent from school logged in from home when she knew the class was meeting; she participated in the discussion, got the homework, and was completely prepared the next day” (2004, p. 14). Remote access and online coursework are part of the educational environment of the future, but technology can also enhance classic and traditional in-class instruction. Insinnia and Skarecki's example highlights the connection between two different environments, that of the home, and that of the classroom, and how these two can be connected now via technology.

In Insinnia and Skarecki’s chat room activity, they permitted their students to read the discussions they had with each other while chatting about the subject material under scrutiny for the lesson. The authors write that, “these two eager students read their homework chat aloud for the class. It was no different than reading a script. The class was immediately engaged, many ‘listeners’ finding their own questions answered. The next day nearly everyone arrived with a homework chat” (Insinnia & Skarecki, 2004, p. 14-15). Student interest and authentic learning
were promoted in this instructional example because of the chat room appeal to the emerging adolescent group. As with many of the instructional activities referenced in this paper, here again technology serves as a tool for student learning.

There are many ways in which technology can serve as a tool for student learning. Today, it is common knowledge that the Internet provides writers with a certain degree of anonymity. One way in which this feature of technology can enhance student writing is via writing in a space where anonymity can be relatively guaranteed, in a relatively consequence-free space. Blogs, chat rooms, and “web-based environment[s] allow[s] students to take risks with their own writing in a unique context. Depending on how the online context is managed by a teacher or administrator, feedback could be harsher or otherwise misinterpreted since there is no requisite face-to-face contact when writing and revising with peers in an online environment. It also allows them to receive both peer and instructor feedback on their writing through all of the stages of the writing process” (Lacina & Watson, 2004, p. 38). Technology permits this space to exist for the sophomore writer. More surprising are the students who may show a “struggle with the physical act of pushing pen across paper and the sense of liberation they experience when writing on the computer” (Lacina & Watson, 2004, p. 39). Some MGLA students today demonstrate preferences for a keyboard as an input device over pencil or pen-and-paper. Technology can function as a useful tool for a diverse background of students.

Stepping Through the Door of the Digital Age

The literate of the Digital Age, when they peruse information presented to them in online and electronic formats, consider the integrity and quality of the information with which they are presented. In this way they are much more exposed to evaluating critically the sources of information with which they are presented by technology than the “digitally illiterate.” Lacina
and Watson seize on “Mark Prensky’s (2002)” notion of the “Digital Immigrant” and “Digital Native (Prensky, 2002)” in their study of what technology brings to the English classroom (Lacina & Watson, 2004, p. 43). For “Digital Natives,” the literacies and skill sets that accompany their texts and narratives may seem misaligned with the more classic skill sets and literacies of traditional educational approaches. The education setting has morphed with the integration of technology, and the pathway to educational success along with it. Students today must be able to navigate properly through the dense, isolated snippets and pieces of information that make up the disparate information of the digital world today (Lacina & Watson, 2004; Prensky, 2002).

A major challenge to integrating technology into the classroom is the availability of the electronic resources themselves. Once this hurdle is surmounted, a new world of emerging digital dimensions rests at the input device of the user. Those motivated enough to attempt to learn the ins-and-outs of navigating emerging texts and image-based narratives found on the net today swim through a galaxy of visual information. If people are not inclined to explore the emerging digital medium, it follows that they are probably not likely to move beyond basic skill proficiency in the use of current technologies. The basic sociological fact that future generations will grow up in a world replete with real-time, instantaneous informational devices is almost today’s digital reality. Even the most impoverished in the world now carry cell phones. Soon these devices will be able to transmit and receive volumes of data that today we can hardly envision. With the ubiquity of personal online devices around the corner, the Internet and the information found in it are important features of the emerging Digital World. Real-time, handheld, video communication devices and instantaneous information services between remote locations should have an interesting and significant impact on the education environment.
It is important to bear in mind with the marvels of technologic advancement that digital literacies are extensions of those found in more classic and traditional types of reading and writing proficiencies. As previously mentioned in this paper, critical thinking arises from the practice of these skill sets, from the development of these proficiencies as people develop the scope of their cognitive faculties. The practice of reading in an informed manner, of considering authorial intent, context, audience, history, and message take on fresh significance in the new multimedia dress of narratives in the Digital Age. Care should be taken to educate properly those who will have to navigate and to interpret emerging texts and narratives in search of quality information. Evaluating the merits of various textual formats, digital and traditional, is at the forefront of tech-savvy, successful MGLA teachers’ instructional activities, and is taught to emerging generations from a young age forward. The role technology plays in the immediate environments of people is becoming more central in the 21st C. world. Students from quality education systems harness the power of technology in the personal and work spheres of their lives. The classroom of the effective, tech-savvy MGLA teacher is an early site for positive development of digital proficiencies of the students in the 21st C. education environment.
Chapter Three - Methodology

Purpose of Study

This study investigated students’ responses to tech-integrated activities in an adequately tech-resourced MGLA classroom during a unit of novel study. Specifically, the principal researcher observed and surveyed a 7th grade MGLA class at a local public middle school as they used technology to enhance the teaching and learning of Beverly Naidoo’s young adult novel Journey to Jo’Burg. This research helps focus attention on the attitudes and preferences of students towards technology in the middle grades age group as the principal researcher investigated the question, "What are 7th grade student responses to a tech-integrated Language Arts unit of literature study?"

Context and Subjects

Procedures involving human subjects followed during the course of the study included tech-integrated activities that tie into the North Carolina 7th Grade Language Arts (LA) Standard Course of Study (SCOS). The study used Beverly Naidoo’s young adult literature story, Journey to Jo’burg, as a centerpiece for instruction. The unit plan content focused on the themes and events surrounding apartheid in South Africa, as told from the perspective of oppressed citizens during the historic period. The unit plan spanned five weeks (Appendix B).

There were 42 students in Ms. Stone’s 7th grade team at a local, suburban middle school in a large school system in North Carolina. The school has a student enrollment of about 600 students. The school follows a Middle School philosophy that includes block scheduling, physically separated grade levels (called houses), team-teaching of core content, intramural after-school sports programs (no school sports teams), and advisee/advisory groups. The school has been open for about ten years. At this school, teams of core-content teachers are matched with
students in a grade level team on various halls of the school. The school has technology resources which include a mobile cart of wireless laptops connected to the Internet, several computer labs, and one or more computers in each classroom. Tech-integrated activities in which students participated include: (a) a directed online scavenger hunt, (b) undirected online research, (c) document creation in MS Word, (d) a web quest, and (e) website development.

Students’ confidentiality was protected, and steps towards safeguarding anonymity were taken in the study. Data were recorded, stored, and analyzed electronically via laptop or desktop computers. This data included surveys, field observation notes, and the student's final project, their websites. Minimal student identifiers (gender) were collected during the course of the study.

Pseudonyms were used for purposes of reporting data if/when reference to a particular student’s work or response were necessary. Information sources such as observational notes or responses to student and teacher surveys were kept strictly confidential during and after the course of the study by the principal researcher. Student work was kept by the student, the teacher, and the principal researcher. Select culminating activities were archived with aforementioned confidentiality measures taken on a CD-R. Information gathered during the course of the study was kept in one secure location by the principal researcher. The principal researcher, members of the thesis committee, school administration, Ms. Stone, or parents of the class involved in the research had access to this information.

Data Collection

During the unit students completed several technology-integrated activities on their own and with peer and teacher collaboration. Students in the class completed the following activities: Pass Books (much like passports) in a Word document; a “History of Apartheid” in PowerPoint;
a web quest on the Political and Physical map of Southern Africa; a “Theme Sketch” of Apartheid issues, events, and people in PowerPoint or Word; and a song, speech or poem about an issue, event, or person related to Apartheid in Word. Culminating activities included a presentation of students’ “Theme Sketch” and students' websites. These activities were mapped onto each other in a scaffolded manner so as to increase student understanding of the subject during the course of the five week Journey to Jo’burg unit.

Data sources collected throughout the unit included: (a) field notes derived from direct observation of students’ participating in the unit activities; (b) an initial and final questionnaire that inquired about student responses to technology and required unit activities; (c) an initial and final, semi-structured teacher interview; and (d) students’ culminating projects (their websites).

Data gathered for this study came from observational notes that comprised 15 pages of typed text taken during four classroom observation periods of ten hours total duration. Two recorded, semi-structured teacher interviews of an hour-and-a-half that included 118 questions (50 on the initial teacher interview and 68 on the final teacher interview) provided teacher-centered data. One interview was conducted at the beginning of the research period, and one at the end. Two student questionnaires of 59 questions (21 on the initial student questionnaire, 38 on the final student questionnaire) produced student-centered data. The initial questionnaire was given to the students at the beginning of the research period; the final student questionnaire was given at the end of the research period. This staggering of interviews and surveys was made in an attempt to pre- and post-assess the participants in the study. It should be noted that complexities in approval processes allowed limited classroom observation time for the principal researcher. Since the lion's share of the information gathered by the instruments used in the study was of a self-reported nature (student surveys, teacher interviews), the short time-frame for
conducting actual research in the classroom impacted the volume of direct observation permissible to the principal researcher, but not the quality of information that the principal researcher received from students and Ms. Stone.

Data Analysis

Throughout each of the data collection phases of the study, the principal researcher transcribed and completed a post-observation review of the field notes, observations, and interviews, while looking for clarity and completeness. The data were reviewed both throughout and at the end of the unit, using content-analysis and constant-comparison methods to determine recurring themes. In this sense, the principal researcher was a kind of an instrument for the study. During the course of the study, the principal researcher verified with Ms. Stone themes and observations to assure validity of analysis and interpretation. Student questionnaires aimed to determine students’ attitudes, ease of use, and the practical utility of tech-integrated activities in their study of *Journey to Jo ’Burg*. For the purposes of this study, the information that students and teachers report as what they do with given pieces of technology in the classroom is not subject to interpretation, i.e., their answer is their answer. In this way, the validity and reliability issues that normally surround survey and interview questions were side-stepped by this study. This fact aligns with the broad qualitative nature of the information gleaned from students and teacher alike. As the expert in the field, the principal researcher's ability to formulate questions specific to the dynamic and complex arrangement of a moment of research in a 7th grade Language Arts classroom outweighs the detractions of the truthfulness of interpretation *non sequitur*. This study aimed to answer the question, "What are 7th grade student responses to a tech-integrated unit of literature study?" Further research could examine the validity and reliability of what students report as their answers to this question.
Teacher interviews focused on the teacher’s perspective regarding the accomplishment of instructional goals, integrating technology into the unit, and the impact of the tech-integrated activities on student learning. Students’ culminating projects were analyzed based on Ms. Stone’s grading scale. The final student survey included questions that aimed to (a) evaluate students’ attitudes towards tech-integrated activities during the unit and (b) focus on the relationship between the quality of their work and the role technology played in it. Questions for the student surveys and teacher interviews were written by the principal researcher in a qualitative fashion aimed to gather as much information about specific issues such as tech-integrated MGLA core-content instructional activities, or as general as what tech resources are available at the school.

A qualitative software research application was used to assist in analysis of the electronic documents that I created during the course of the information-gathering phase of the descriptive study. A 30-day, trial copy of NVIVO™ was used to organize, arrange, code, and analyze electronic data. Data transcribed by the principal researcher from the hard-copy student surveys were entered in a tabular format into Excel according to question. Data painstakingly transcribed by the principal researcher from the audio recordings of Ms. Stone's teacher interviews were written in Word. Once all of the data was entered into e-format, the principal researcher imported the electronic documents into NVIVO™ for coding and analysis. Data were coded according to relevant, emergent themes and topics. String queries, or searches for specific letter or word arrangements, were performed to arrange data sources according to relevant search terms such as .org, .net, .com; Publisher; or tech-integrated. Idiomatic phrasing and indirect description found in data source documents that reflected technical education terms were coded according to concept. Here again, the principal researcher served the study as a type of
instrument, since recognizing and recalling pedagogic-related terminology is part of the function of teacher candidates for M.S. Ed.. For example, if Ms. Stone gave a response that was a description of "peer review" without using the exact phrasing, "peer review" or something such as "student collaboration," these data were coded according to the appropriate technical education term, in this case, "peer review." Accordingly, data were able to be analyzed across data sources according to thematic or conceptual content and relevance, which assisted in organizing evidence from data to support study findings. There were 32 thematic/conceptual sub-domains which emerged from the data sources. The structure of the Data section of this paper covers salient emergent themes as arranged in the qualitative software application based on the principal researcher's observation and experience, as well as by particular data source.

Limitations

Limitations of this descriptive study include: (a) sample bias due to the particular student demographic make-up of the class and/or the school; (b) students' awareness of participating in a research study (Hawthorne effect); (c) construct validity based on the qualitative nature of the study; (d) data collected may be non-generalizable to a larger population (external and population validity); (e) experimenter bias due to the particular educational, ethnic, and socio-economic background of the researcher.
Chapter Four – Findings

The data collection portion of this study yielded a volume of fruitful information for analysis. Data collected included qualitative and quantitative information that covered such education topics as teacher-student instructional relationships; critical thinking skills; modified and differentiated instruction; different learning styles; student technology preferences, attitudes, and proficiencies; and effective tech-integrated Middle Grades Language Arts instruction. Data came from direct observation, observation notes, student surveys, teacher interviews, and student work.

The three main sections of this chapter - Classroom, Teacher and Student Dynamics; Themes; and Discussion - evolve from the body of data gathered during the study. Accordingly, this chapter begins by detailing study findings within the varying school, classroom teacher, and student dynamics of Ms. Stone's 7th grade Language Arts class. Items in this section of the chapter include discussion of the topics Student Technology Background, The Tech-Integrated Environment and Teacher, Tech-Integrated MGLA Curriculum, and Student Work. Following this description of the dynamics, Chapter Four discusses the seven themes that emerged from the data: 1) Student Engagement with Tech-Integrated MGLA Curriculum, 2) Teacher Engagement with Tech-Integrated units of LA Study, 3) Enhancing and Improving Critical Thinking Skills, 4) Evidence of Multiple Intelligences and Knowledge Sub-Domains, 5) English/Language Arts Competencies Development, 6) Student Digital Proficiency Development, and 7) Unit Challenges. The chapter concludes with a summary of the critical findings in the chapter.

Classroom, Teacher, and Student Dynamics

Student Technology Background
The initial student questionnaire (Appendix A) consisted of 21 questions that were designed to evaluate student technology resources at home and to ascertain previous exposure to common technology resources within students’ particular educational backgrounds. A majority 95% of the students in Ms. Stone's class reported that they both (a) possessed a computer at home, and (b) their computer at home had some sort of Internet access. In terms of Internet access, 43% of Ms. Stone’s class reported that they had DSL. The next-most reported category of Internet access type at home was, “I Don’t Know,” at 29%. Students reported that they had the Internet access types of Cable and Dial-up respectively rounded out the rest of this measure (respectively 23% and 6%).

Ms. Stone's 7th grade class represents a plugged-in digital generation of students. In Ms. Stone's class, 73% of students reported that they possess or use a cell phone. Nearly half of the class, 48% of the students reported that they Instant Message (IM) their friends with their cell phones. Almost a third of the class (31%) reported that they IM their friends once per week; 23% that they IM their friends two times per week; 15% that they IM their friends three times per week; and 23% that they IM their friends five or more times per week via cell phone. Students reported that if they owned a computer at home, they were most likely to use it for "surfing, 41%; games, 20%; and schoolwork, 24%." In Ms. Stone's class, 65% reported that they use Instant Messenger and chat programs at home. Almost a third of the students in Ms. Stone's class (32%) reported that they chat online with friends at home on average four times per week. This same percentage (32%) of students reported that they chat online with friends at home on average greater than five times per week (Appendix C, Table One).

A section of the initial student questionnaire included questions geared to evaluate students' previous exposure in their educational backgrounds to a spectrum of tech-integrated
activities that included online (web-based) and software resources. In Ms. Stone's class, 100% of students reported that they had used Word before. A similarly high 97% of students reported that they had used PowerPoint before. In Ms. Stone's class, 95% of students reported that they had used Publisher before. An identical 95% of students reported that they had taken some sort of online testing before. Other Language Arts online resources were reported to be used less, with 86% of Ms. Stone's class stating that they had used an online dictionary; 68% an online citation machine; and 38% reporting that they had used an online translator before. In terms of webpage design, 65% of students in Ms. Stone's class reported that they had created a webpage before. (Appendix D, Graph One).

Students in Ms. Stone's class reported in the Final Student Questionnaire that they had ample experience working with technology. Students filled out survey questions that gauged their self-reported proficiencies with various pieces of technology, from software to hardware. Students' responses were reported along the following scale: Beginner, Basic, Average, Advanced, and Expert. Almost every student in Ms. Stone's class reported that they were Average or Advanced users of technology. For some questions, students reported that they were Expert users. For example, 14 students self-reported that they were Average Word users, 15 were Advanced, and 4 Expert. For Publisher, 20 students self-reported that they were Average, while 13 reported that they were Advanced users. For PowerPoint, students in Ms. Stone's class self-reported that 8 were Average, 19 were Advanced, and 5 were Expert users. These findings are illustrative of students' proficiency levels with the Microsoft Suite package available at the school (Appendix D, Graphs 2 - 4).

Within the domain of digital proficiencies that require critical thinking and abstraction skills, students in Ms. Stone's class reported some interesting findings in respect to their self-
perceived proficiency levels. For example, students in Ms. Stone's class reported that for Online Information Research, 17 were at Average, 8 at Advanced, and 3 at Expert levels of proficiency. Proficient to highly-proficient self-evaluations of technology proficiencies continued to emerge from the final student questionnaire data. For the category of Cutting and Pasting Text, students reported levels of 9 Average, 9 Advanced, and 15 Expert. For the digital skill of importing images into software applications, students reported 7 Average, 18 Advanced, and 5 Expert. For the digital skill of Copying and Pasting Images from one software application to another, students reported 9 Average, 8 Advanced, and 14 Expert. It is clear that Ms. Stone's students regard themselves as proficient to highly-proficient users of technology with respect to these digital skills. (Appendix D, Graphs 5 – 8).

*The Tech-Integrated Environment and Teacher*

Ms. Stone was a critical source of information for this study, especially since she described her views of what was going on in the classroom in standard pedagogic terms. The volume of data collected during the study from the most to least was: a) teacher interviews, followed by b) student questionnaires, and c) classroom observation notes. Information gathered from Ms. Stone's interviews proved invaluable for triangulating relationships among data gathered from the study's qualitative research instruments, especially in light of the fact that the depth and specificity of her answers was considerably greater than the information reported simply by, for example on the final student survey: "Rate your ability with Word according to the following scale: Beginner, Basic, Average, Advanced, Expert."

Teacher interviews were semi-structured. The initial teacher interview questions were gauged to ascertain general information about Ms. Stone, including her own educational background, her classroom and the school environment, plus how the day-to-day dynamic of LA
core-content instruction is handled at the school. Ms. Stone is a third year MGLA and Social Studies teacher who graduated from a local university with a Bachelor of Arts in English and Teaching Certification at the High School level. Ms. Stone has plans for continuing her education at some point in her career.

Ms. Stone reported that the school follows a modified year-round calendar, and has a population of anywhere from 520 – 560 students at a given time of the year. Grade levels are broken down in teams, and each team consists of eight core and two special education teachers. Also, each grade level is physically located in different regions of the building in order to maintain structure and a self-contained environment. The average team size for the 7th grade is about 45 students. There are four Language Arts teachers at the 7th grade level, and one Resource Language Arts Teacher. The instructional day follows a seven period schedule.

Ms. Stone reported that the school has three computer labs, with mostly IBM, Windows desktops in them. There are some Macintosh desktops available, but they are mostly used for yearbook. There is a mobile laptop cart that has a wireless router attached to it for in-class use. Software available to students at this school includes the MS Office Suite (Word, PowerPoint, Excel, Publisher). There is broadband Internet access at the school, and students have their own school email addresses.

Ms. Stone reported that the number one technology resource that she wishes she could provide for all of her students is a personal laptop. In her own words, Ms. Stone stated that:

As an English teacher, one of the struggles with writing is the actual mechanical aspect of it. Hand cramps, the inability to write clearly, a lack of confidence with their actual mechanical writing. You put a laptop or some sort of word processor in front of a student and they're a completely different student in regards to writing. They see it as,
they just don't see it as a task anymore. It becomes something that that they actually can do. I don't know if it's because they have the comfort of spell-check and grammar-check. It's also a faster process. It's easier to erase. I can't tell you how many students that hate to use an eraser on a pencil. It's just, they already feel that they've already gone through the task of writing down, and to erase it breaks their heart. Whereas in a computer it's much easier for them to highlight and delete. It's just an observation I've made that's very psychological with students.

Ms. Stone expanded on the utility and improvements technology brings specifically to the teacher's side of the classroom experience when she said:

Also, for my reasons, it's easier to read a double-spaced, Times New Roman paper than it is a hand-written paper. You know the drawback is that for the 7th grade writing test they do have to hand-write their responses. But I have found with my three years of teaching 7th grade, that even though I for the majority of the year use a word processing tool for them to write their papers, they usually don't have any problems going back to hand-writing. Actually, they tend to even be more willing to hand-write because they haven't had to hand-write all year.

Ms. Stone's description of the utility and enhancements technology permits students aligns with what the current research literature on tech-integrated writing maintains. If resources were not an issue, another technology item that Ms. Stone would prefer in her classroom is a ceiling-mounted digital projector and a drop-down projection screen. Ms. Stone feels that these resources would enhance her instructional capacity as well as the learning potential of her students by permitting a wider array of cutting-edge audio-visual instructional techniques at her disposal.
The final teacher interview followed a semi-structured format with questions that focused on the following areas: Unit Specific Questions, the Webquest, Passbooks, Online Testing, Online English Information Resources, Website Building, Scaffolding Paper-based Activities with Technology-based Activities, General Technology Use, Digital Literacy and Skills, and The Unit in Hindsight. In general, Ms. Stone characterized students’ reactions to technology-integrated activities during the interviews positively. She reported that there were a handful of students that found the new software application Publisher challenging and frustrating to learn, so she modified the instructional plans of these students to include the more familiar software application Word or PowerPoint for purposes of unit content presentation. This modification solved these students’ problems with presenting information they found in e-format.

Overall Ms. Stone reported that she was satisfied with the quality of the online information that her students found during the online research portions of the tech-integrated unit plan. Throughout the course of the unit, relevant information was scaffolded with pen-and-paper activities so that hard-copy records of information could be archived for redundancy purposes. If students lost the hard-copy of their presentation, or inadvertently deleted their e-copy of it, the safety-net of having a paper version of the information was a safety feature for students in Ms. Stone’s class.

Tech-Integrated MGLA Curriculum

Data from the classroom observations indicated that a wide array of activities took place during website creation. Class time spent working on websites followed a routine, structured schedule. Ms. Stone was readily available for help when students had questions about their immediate task, and she made rounds during website creation time in order to monitor and to
assist students with their content and design. Most students were on pace with the development of their websites, but a few (less than five of the 42 total participants) had fallen behind during the process.

Students were focused and intent on creating their websites; they were genuinely interested in making their websites, and enjoyed creating web pages as a new tech-integrated instructional activity. Some students found specific technologic tasks difficult, such as copying and pasting images from the Internet into Publisher. Other challenges that I observed had to do with image and text resizing or inserting hyperlinks properly. Usually students would ask a peer, Ms. Stone, or the Media Center Assistant for help when they ran into these sorts of technological impasses. My observations confirmed that these hang-ups did not discourage or diminish the experience students were having while completing the work necessary for the websites. When this researcher observed student reluctance to work on the tech-integrated activities (it rarely occurred during the course of the study), he observed that it consisted of instances of momentary frustration with a particular problem which, when resolved, alleviated student frustration and permitted the student to return to work. In fact, these types of challenges were important steps along the developmental process to proficiency in webpage creation.

One feature of the instructional exchanges that occurred between more and less-knowledgeable Publisher users was the form direct instruction would take. A series of commands was normally verbalized to the less-knowledgeable from the more-knowledgeable user, and sometimes the more-knowledgeable user would emphasize his/her direct instruction by pointing to where to click or to select on the display. This kind of exchange was not limited to teacher/student pairs, but also occurred between students in the class. These direct instruction moments normally consisted of a list of commands that involved selecting, clicking, and then
transforming content into a different format, appearance, or window. Even students who were behind with their projects could demonstrate the ability to follow these sorts of verbal command strings, if at worst with visual guidance from the more knowledgeable user pointing out where to make changes on the screen.

A variety of online resources were used by students while creating their websites. Some of the online sources of information students used to create their websites included: Google, dance.net, the BBC, Channel4.com, Noodletools, the school’s media center website, the OSLIS citation machine (Oregon School Library Information System), Harpercollins.com, Authortracker.com, Contemporarywriters.com, children’s literature network, beverlynaidoo.com, and other public school websites that include information on Naidoo and Journey to Jo’burg like teachersnetwork.org.

Student Work

The culminating projects, building websites themed on Beverly Naidoo’s Journey to Jo’Burg were interesting visual presentations. Almost every student was able to complete the assignment on-time, and many of the websites were fine examples of student creativity within the medium of webpage presentation. Background colors that accentuated text and link colors; images of South African flags, landscapes, animals, towns and people; pictures of the author and of the cover of the Journey to Jo’Burg; were all items that students integrated to some degree into their websites. This is important because with just words as for example, in a standard essay or paper, description is left to the mind of the reader. With the websites, students were able to incorporate real-world visual images found on the Net into the text of their websites, thereby delivering a much different presentation to their audience. Ms. Stone approved the quality information for the students’ websites, then the students were able to present the information in a
medium that captured the audience’s eye in a fashion more appealing than standard non-digital media display. Ms. Stone reported that students enjoyed completing the website building activity more than other previous incarnations of presentations in her class that had been based on PowerPoint or simply non-digital materials.

This is not to say that the websites were perfect. From a technical perspective, these websites fell short of full-functionality. Most links were broken (created improperly), and sometimes page content ran on and on into web pages that required significant scrolling to view presentational content. In fact, many sites did not have links that worked. This could be due to a confusing software procedure required for properly placing a link in Publisher.

Image resizing was another issue that had to be addressed during the web design project. Simply cutting and pasting images from the Net to a computer application does not guarantee that the image will appear in proper size or resolution quality, as Ms. Stone and her students soon discovered during the creation phase of the websites. A few students were able to learn how to manage these more technical aspects of web design, and, of course, Ms. Stone mastered these digital skills in order to model how to make these changes for her students. These aspects of web design were overlooked in terms of grading for the unit Culminating Project, as they were marginal in significance to the real work completed for the presentation content on *Journey to Jo’Burg*. (Appendix E).

*Themes*

Data collected during the study included quantitative and qualitative information. Graphs came from the quantitative data which represented, for example, the levels of self-reported student proficiency with various software applications, or common online experiences such as researching a pre-selected topic on the Net (Appendix F, Appendix G). Broad pedagogic
themes, over-arching education styles and trends, and relevant educational psychology background and theory as discussed in the literature review provide a context for themes which emerged in this study. Strong discussion implications are considered to have two or more separate data sources reporting the same findings. Weak discussion implications are considered to have only one data source reporting the phenomenon under discussion.

Seven re-occurring themes emerged from the analysis of data: 1) Student Engagement with Tech-Integrated MGLA Curriculum, 2) Teacher Engagement with Tech-Integrated Units of LA Study, 3) Enhancing and Improving Critical Thinking Skills, 4) Evidence of Multiple Intelligences and Knowledge Sub-Domains, 5) English/Language Arts Competencies Development, 6) Student Digital Proficiency Development, and 7) Unit Challenges. Insight gleaned from this broad array of data underscores the importance technology can play in best practice tech-integrated MGLA instruction.

Student Engagement with Tech-Integrated MGLA Curriculum

Evidence of student responses comes from all three instruments utilized in the study: a) student questionnaires, b) teacher interviews, and c) field observation notes. Overall, based on direct observation by the principal researcher, Ms. Stone explicitly stating, and students' survey answers, student responses to the tech-integrated literature unit were positive. In the final teacher interview I asked Ms. Stone, "What kind of reaction do you typically observe from students when presented with instructional activities that integrate technology?" She replied, "A positive reaction, I would say 9 out of 10 times." This finding was also supported by student responses as observed by the investigator of the study. For example, field observation notes indicated that "Often, students would display surprise at the outcome of cutting and pasting different images or text selections into their webpages" by stating "cool" or expressing pleasant
surprise through their body-language. Elsewhere, field observation notes indicated that, "Students would compare their website design with other peers in the class in order to determine what was “cool-looking.” When a student compared his/her websites to a peer's, it established moments for informal review of that student's work, and often led to quality enhancements for web pages that needed design or content additions. In general, field observation notes, final student projects, and teacher interviews indicate that students exhibited positive reactions to the tech-integrated unit of literature study.

Specifically, most students in the class were able to reach a stage during the tech-integrated unit that is well-summarized by the following field note observation: "one student was able to complete all of the required tasks for the day. Her website had lots of text that were her summaries. There were also pictures on the website related to apartheid and Beverly Naidoo." Every website that the students in the class created had at least some relevant text and several images arranged in an accessible stylistic structure that helped to convey thematic information regarding apartheid and Journey to Jo'Burg via the construct of the website. (Appendix E).

On the negative end of the student response spectrum to the tech-integrated literature unit, students mainly voiced frustration with their own inadequate proficiency levels with the technology resources required for use. In my observations, I noted that when technology failed, such as when an application quit, students voiced frustration and irritation with the resource. Apart from technology failing, students also expressed frustration with their proficiencies with technology. Another note reports, one student commented to a peer, "It’s hard to type." The student to which the comment was directed shrugged and kept on with his work. Another example of student frustration with technology occurred when one student whispered to another
Frustrated student responses to technology and the tech-integrated literature unit, in general, are summarized well by a response of Ms. Stones during the final teacher interview:

For the students who became overwhelmed with the project, it just came down to not understanding Publisher. Being too overwhelming of a software program for them to figure out. Sometimes not doing what they wanted to do. It wouldn't allow them to do what they wanted to do. Not that it wouldn't allow it, but they couldn't figure out how to do it, and that would frustrate them. But overall I think the kids enjoyed it.

Students involved in the tech-integrated literature unit were frustrated by their limited understanding and proficiency with Publisher instead of exhibiting frustration with having to work with technology in general as a required part of the tech-integrated literature unit. Ms. Stone expressed this important nuance in her interview response when she explained that it was "understanding Publisher," and not simply working with technology, that was one source of frustration on the part of students during the course of the unit. It is important to note in this interview quotation that Ms. Stone, even when voicing drawbacks to the unit, ended with a positive characterization of student response to the tech-integrated literature unit.

Teacher Engagement with Tech-Integrated Units of LA Study

The data regarding Ms. Stone's engagement with technology comes from observation notes and transcriptions of the teacher interviews. In general, Ms. Stone characterized the role technology played in the literature unit as positive and helpful to student development. For example, when asked, "Do you see the use of a word-processor as enhancing writing skills even though it's not long-hand?" Ms. Stone reported, "Definitely. Like I said it's just a confidence
booster. There are a lot of students out there, especially a lot of my boy students that are just very self-conscious of their hand-writing." Picking up on the positive impact technology has on student confidence, I followed up in the interview by saying, "I want to get back just for a second to the impact technology…has on student confidence." Ms. Stone's response follows:

It definitely increases student confidence…or the desktop computer…because of its access to the Internet, for research. It's a give and take. I think it's a shame that these students don't know how to use a card-catalogue like I know how to use one. I think it's a shame that these students do not feel as comfortable with a research book in front of them like as they do the Internet, or a website.

But at the same time, like I said the other day, these students have grown up with technology all their lives in a way that I never did. They're digital natives. I have to remember that and to remind myself of that. If they're going to do the work at the same quality or higher quality than they would have done the work with their book, I can't argue against not using the Internet.

Ms. Stone's response weighs the positive impact technology can have for student development with the drawbacks it can represent. She points out the fact that middle grades students today can be characterized as Digital Natives (Prensky, 2002). Ms. Stone's quotation indicates that she observes and respects the fact that Digital Natives are predisposed to work with technology over more traditional non-digital systems of information or technologies, largely because they have grown up with ubiquitous digital technology in their everyday lives. For Digital Natives, the paradigm of work tools has shifted away from pen-and-paper, hard-copy instruments to digital technology applications that streamline and enhance the instruments' capacities via the potential of the computer.
One specific example of comparing pen-and-paper with digitally-based activities was during the webquest stage of the tech-integrated literature unit. When asked, "How would you describe students' reactions to the Southern Africa webquest activity? Ms. Stone replied:

I think that they felt it was nice to get out of the book. I mean, they didn't do anything that different than what they would've done if they were using the textbook. They still had to read information and answer questions after reading the information, they still had to look at a map and interpret the map in order to answer questions. I just think the fact that they were having to use the computer to assist them in that activity takes the mental block away from them if they have one when a book is in front of them.

In this example of a tech-integrated instructional activity, the learning goals for non-digital or digital format parallel each other. Ms. Stone explained the improvement technology supports when students are conducting information search activities when she stated that "using the computer for online research" can "remove mental blocks" some students encounter in specially-coded hard-copy information searches.

The block that technology can remove from information searches speaks to most of the challenges that can arise from the use of a card-catalogued or hard-copy system of resource information. Instantaneous feedback permits the user of the digital information archive to continue the search at closer to the rate of speed of the user's thought, thereby significantly reducing the possibility of frustration or distraction from the search on the part of the user. Children are aware of this type of advantage to working with technology and Ms. Stone's quotation supports the fact that students prefer working with technology in information searches.
One of the potential drawbacks to online information searches is the wide gamut of data available on a given topic on the Internet. Therefore, concern regarding student focus would be warranted. However, when asked in the final teacher interview about whether students remained on task during the webquest, Ms. Stone replied that,

They remained on task. Some of them got frustrated because some of the pages that they were taken to had a lot of information and they had to really read the subtitles of the website and skim the website to find the area that I was focusing on specifically with my questions.

Ms. Stone's response indicates that when managed by the teacher properly, online information searches present students with opportunities to evaluate critically information sources found on the Internet. Digital searches of electronic archives enhance research activities in two fashions: (a) they permit instantaneous feedback, and (b) they provide practice of critical thinking skills that interpret the validity of sources found in searches of digital archives.

Another example of Ms. Stone's positive characterization of technology integration in the literature unit was evident during the Passbook activity. Students were required to create a document in Word that imitated a Passport, complete with information about themselves and a picture. Ms. Stone commented in the final teacher interview that, "I think they really enjoyed it." Ms. Stone explained, "I've done it both ways, last year I did it with just –they had to cut the passbook out, fill it out by hand. Paste it. Draw their picture or brought a picture from home and glued it on." This year "was the first time I'd actually done everything digitally. Not only did it produce higher quality work, but it also produced a more believable passbook." This enhancement to the Passbook activity provided by technology was a positive for Ms. Stone's
class. Fortunately, the resources at the school permitted the integration of technology into the traditional Passbook activity as it was completed.

Ms. Stone explained in the final teacher interview how the Passbook activity was structured: "we took them down to the library and the media specialist took their picture and put them in a shared directory. So they were able to go into Photoshop and drag-and-drop their picture into the Word document." Without shared directories on the school's server, this technological enhancement to the Passbook activity would not be possible.

Furthermore, when prompted by the investigator in the final teacher interview, "Do you think that students could have figured that out on their own?" Ms. Stone replied, "Some of them did, yes. Actually, I didn't figure it out on my own." Ms. Stone explained that she "figured it out by troubleshooting it with the class. I had a projector, and I was doing a passbook with them, as they were doing it. When we came up against the problem, we were problem-solving the task together." The Passbook instructional activity highlights several key themes: (a) enhancements that technology can bring to core-content instruction; (b) technology as a critical resource for unique in-class instructional activities; (c) non-traditional teacher-student relationships within the classroom that (i) empower students and (ii) shift the teacher's role more into an instructional designer or guide for the class than a vessel and transmitter of knowledge; and (d) group work that incorporates the teacher's ability to model critical evaluation skills to students while as a group learning a new technology.

Another example of the type of enhancements that technology can bring to instruction was in the online ethnic background search required as part of the Passbook activity. Ms. Stone explained in the final teacher interview that,
One of the advantages I really like because I had the laptops when they were doing this activity which has the wireless connection. When they picked their ethnic group, in the past I've just said, "Pick an ethnic group that sounds cool to you." We never had resources for them to research their ethnic group as they're picking their ethnic group for this part of making their Passbook. Well, this time I was able to require them to go on the Internet, go to Google and type in various ethnic group names, read about them, find an ethnic group that really interests you, and then write down ten facts about that ethnic group.

Ms. Stone summarized the pedagogic benefits of integrating technology into the ethnic background activity when she stated in the final teacher interview that, "Access to the online information permitted a greater depth and ownership of their Passbooks because they now knew something very specific about who they were pretending to be." This example demonstrates (a) the enhancement technology can add to instructional activities; (b) integrated technology activities linked to authentic, quality learning and development; and (c) the contrast between hard-copy and digitally-based instructional activities.

**Enhancing and Improving Critical Thinking Skills**

There are several examples of critical thinking on the part of the students and the teacher that occurred throughout the tech-integrated literature unit. One observation note reported that "students showed no problems logging in [to computers], remembering their logins/passwords." Another field observation note reported that "most students bulleted some information" to present relevant content clearly in their websites. Some students would work in one software application (Word) and then copy and paste their work into the final software application (Publisher). A field observation note reported this student trend: "one student was observed using Word to write her summaries, from which she would copy her writing into
This instructional strategy scaffolded student proficiency in one computer application (Word) with learning to become proficient in another (Publisher). This modification was used for students who became too frustrated to work with the new technology introduced in the literature unit (Publisher).

In fact, Ms. Stone established this scaffolded approach to permit struggling students with the confidence necessary for development in proficiency from Word to Publisher. This modification was used for all students who became too frustrated to work with the new technology introduced in the literature unit (Publisher). This modified instructional approach maps critical thinking skills associated with one computer application on to the use of another. In other words, the actual process of writing content for the website was carried out in Word, and then cut and pasted (and formatted appropriately) in Publisher once the particular piece of unit information was ready to be placed in the website. In this way, students could sort through design and content problems that normally arose from frustration with the appearance of their web pages after they had written required pieces of information for the unit websites. In this way, students were able to develop critical thinking skills normally related to such core-content knowledge as paragraph structure, were just as important in the frame of a webpage as in for example, that of a Word document essay to be turned in for a grade.

More technical and complex questions on the part of the students while working with technology during the unit were normally addressed to the teacher or more tech-savvy peers. One observation field note traced an example of such assistance to students from the teacher:

Technical questions such as, 'Is it possible to change a picture from landscape to portrait?' were directed by students to the teacher, who would…help with the change.

Evaluation of if the request were possible was performed by the more proficient user, [normally]
the teacher, who would come over and use the student’s laptop in order to achieve the requested task. Sometimes this would take a moment as Ms. Stone evaluated the editing capacities of the program. One time an alternative solution was discovered by Ms. Stone, which the student readily accepted as fine for their activity purposes.

This field note described how Ms. Stone modeled critical evaluation skills for students when they became stuck on how to complete a particular digital task, such as presenting information in "landscape" format as opposed to "portrait." Of note is the fact that this framework for support includes not only the standard superior critical proficiencies of the teacher, but of the students in the class as well. Students could consult a peer who knew how to complete a given critical task such as changing the informational display from "portrait" to "landscape." This feature of the classroom instructional climate empowers students, and incorporates the role of the teacher into one whose function is more of a consultant or colleague to confer with when an impasse on the part of the student is reached.

Another critical thinking skill that was fostered by the tech-integrated literature unit was the use of multiple application windows simultaneously during one work session. Students would have several windows open at a given point in time during their work on the computers in order to be able to complete the current required instructional activity. Minimizing and resizing one window to another window and the "Alt + Tab" keyboard shortcut were used by students to navigate back and forth between relevant software application windows. When asked about this user-phenomenon in the final teacher interview, Ms. Stone responded:

I'd say they usually have two or three applications open at one time during an activity that they might do for me. For example they might have two Internet Explorer windows open, one with the citation tool, one with the website they're using and then Word,
because they might be writing a report. Or two IE sites and Publisher. When they did PowerPoint, a lot of them had four applications: two IE sites up, PowerPoint up, and then they would have Word up.

Distributing the pieces of a digitally-based task across several computer applications highlights the multi-tasking critical thinking skills Digital Natives tacitly demonstrate in their computer use. Working with multiple software applications in different windows practiced two skills sets: a) the skills sets of selecting text relevant to the greater instructional goals at hand, and b) then arranging content in an edited fashion in the destination document application.

Critical information evaluation skills and the level of Language Arts understanding of the student collide in this type of technology-supported writing activity. In effect, with the gamut of information available to students on the Net, the task of editing while using the Internet as a research sources transforms writing into an activity that copies and pastes critically-selected information by the student between windows. This simplifies the writing process for most, since creating content becomes a matter of cutting and pasting text from a web-browser into a word-processing software application. However, it does not remove the required critical thinking component of the writing process, which is to understand sufficiently what one is writing to be able to communicate their thoughts effectively to the reader. In fact, the information content of students’ web pages in Ms. Stone's class demonstrates that the quality of informational content is good, and that ideas are communicated effectively and clearly via student writing found on the web pages. In this way, critical thinking skills are practiced in tech-integrated activities, such as writing using the Internet as a research source.

One field note reported specifically how modeling digital and critical skill sets unfolded between teacher and student:
Students moved back and forth between the online citation page and the locations in their websites that needed citations. Ms. Stone assisted one student with how to use the online citation website by running down how to fill in the blanks on the citation page in order to construct a proper reference. Out-loud directions included the dialogue “OK, in that blank you want to put the author’s name, in that blank the name of the site you visited, in that blank the time and date you visited, since you don’t know when the site was updated leave that field blank…”

Ms. Stone modeled critical digital skill sets to the students of her class in this type of explanation by selecting the relevant information necessary in step one of the activity. Then, Ms. Stone exhibited to the student that if they could not find a piece of required information, that it was all right not to include it in the reference, as long as they could defend why they left a field blank. This example highlights the fact that critical thinking skills over-arch tech-integrated and non-digital Language Arts activities, as students must make decisions about which material fits into their vision of the final product.

Other unique critical responses on the part of students included reading the pop-up directions commonly found in contemporary software applications and right-clicking for command options within software. The investigator observed in field notes that "students used the right click option often when editing their webpages." Right-clicking shortens the amount of time it takes to find available commands for a given piece of text or image. It also demonstrates proficient use of software applications on the part of Ms. Stone's students, since relevant commands for a given piece of text or image are commonly bundled in the right-click menu of most software applications.

Another field note describes a "student was observed reading the pop-up directions from the citation website in order to learn how to save citations or to copy and paste them to her
website." This example demonstrates the student's ability to evaluate and examine relevant or pertinent information before making a decision about how to carry out a function in a software application. The field note continues: "This student soon raised her hand and Ms. Stone came over to help guide the student through the process of saving the citation information locally."

When the pop-up instructions failed to give the learner the information needed to complete the proper citation of sources, Ms. Stone modeled the correct procedure to the student. However, this does not mean that the student did not exhibit any critical thinking along the way in this situation. Instead, the example highlights how the student appealed to a more knowledgeable user when confronted with a software function that he/she attempted to learn but could not based on the quality of help available in the software package.

Evidence of Multiple Intelligences and Knowledge Sub-Domains

Instructional activities completed by the students during the tech-integrated literature unit required the use of several different intelligences and knowledge sub-domains. Data which reported the use of multiple intelligences and knowledge sub-domains originated in field observation notes and teacher interviews. For example, in one field observation note, the investigator noted that "Students were able to follow [Ms. Stone's] instructions such as, 'Highlight the links, and then reduce the font size. Pick a smaller font size, maybe 14 point.' These types of instructive comments normally appeared when Ms. Stone was evaluating the design aspect of students' websites. Accordingly, Gardner's Spatial intelligence was one critical faculty that students needed to develop during the course of their webdesign. One observation note reported that, "the phrase 'Design-wise' came up in almost every student's review by Ms. Stone." The union between visual appeal and quality informational content in the websites blends Spatial intelligence with the construction of quality content knowledge on the part of the
Student Responses to Technology

The website activity practiced Gardner's Spatial and Linguistic intelligences. Students' Spatial intelligence development was also evident in the fact that background color was used by many students with an opposite colored font for information display.

Other activities that practiced various dimensions of Gardner's intelligences included inputting data into the computer. One field note reported that "most students demonstrated proficient to highly proficient input abilities. Typing input reflected a fluid, quick input. Hardly anybody had a challenge moving a mouse around or selecting images, multiple lines of text, etc..." Students were also able to use the wheel scroll feature of the mouse with ease if it was included on the mouse. These observations indicate that students in the class demonstrated proficiency within three of Gardner's intelligence domains: Bodily-Kinesthetic, Spatial, and Linguistic. The webdesign activity demanded that students encounter relevant linguistic information on the Internet, arrange it spatially in the webdesign application, and do so effectively using the tactile input tools at hand. In this example, technology permits students to practice various dimensions of Gardner's MIT theory.

English/Language Arts Competencies Development

During the course of the tech-integrated literature unit, many Middle Grades Language Arts core-content proficiencies were practiced by students. Data which reported these findings originated in field observation notes, student questionnaires, and teacher interviews. For example, one field note reported that, "Standard LA correction for the grade level, such as capitalization of proper nouns, was needed during the webpage design process." In one instance, Ms. Stone said to a student, "you need to justify your text. Justify it on the left." Knowing how to arrange text in a document is a standard Language Arts proficiency. Typical English instruction followed when Ms. Stone would spot-check the websites. Capitalization, font size
and appearance, color choices for clarity of the presentation of textual information were all emphasized.

NC SCOS core-content goals and objectives were interwoven into the tech-integrated literature unit. Critical evaluation of information sources is an important NC MGLA SCOS goal. Field notes reported that this critical skill set was practiced repeatedly by students involved in the unit. For example, information students could find on their subjects ranged from the specific (educational background of Beverly Naidoo) to the general (what is apartheid). Also, many students brought up similar websites that contained a lot of information on the author. Filtering through densely presented information on a webpage took time for most students.

Further field notes reveal that, "Most students were diligent in transcribing information they found on the net to their activity handouts," and "Most students bulleted some information." Ms. Stone's instruction also focused on the core content when she directed students, "Just remember, content is more important than pictures," and "You don’t have to write down complete sentences, you just have to write down the facts." Ms. Stone's directions to paraphrase or for students to write in their own words the import of the information they were reading, reinforces resisting the temptation to plagiarize on the part of students. Other English/Language Arts core-content skills sets were practiced by the students in their note taking.

Modeling was another instructional technique evident in the classroom instruction. One student went through an oral modeling series with Ms. Stone with the goal of improving the quality of a portion of his writing. Together, the student and teacher brainstormed better sounding phrases, one of which the student decided was best, so he typed it in to improve his writing. Reading text aloud and brainstorming with a partner are processes that support revision
– a standard Language Arts competency required for writer to utilize during the writing process. This process was repeated at various weak points in the student’s writing.

There are other examples of writing core-content development during the course of the tech-integrated unit. Editing and revision were obvious when one student completed summarizing the chapters, and had created a long list of information with respect to his theme in the novel. The information this student had compiled was too much, so he asked Ms. Stone what he should do from this point, since he had a surfeit of information. She recommended that he "narrow his information down to five or six chapters that really support your theme in the novel, OK?" Sifting through and sorting relevant information for the purposes of presentation is another Language Arts core content goal.

Evidence for direct instruction of Language Arts content that took place during the unit comes from another note that reported one student encountered difficulty in brainstorming the opening sentence of his summary. After responding to his raised hand, Ms. Stone assisted the student by stating, "Beverly Naidoo’s Journey to Jo'Burg begins by…" With this introduction in mind, the student segued into writing his story summary. Modeling how to incorporate an appropriate introductory phrase at the beginning of writing is a challenge for even accomplished writers.

Ms. Stone continually integrated the NC English/Language Arts SCOS. When working with one student, she made the expectations for submission of written student work clear. When he asked her to review what he had written in his summary, Ms. Stone positively reinforced his work: "Good, now just copy and paste it into Word so that I can have a copy. Don’t forget to spell-check it and make sure that the website has the spell-checked version on it."
Spell-checking and ensuring that a final copy is ready for an audience to read are important elements of the NC English/Language Arts SCOS. These examples of practicing NC MGLA SCOS goals all integrate technology somehow into their completion.

**Student Digital Proficiency Development**

There are multiple digital proficiencies and skill sets that students involved in the research study utilized during the course of the tech-integrated unit. References for this claim can be found triangulated across data sources: field observation notes, student questionnaires, and teacher interviews. Digital skill sets and proficiencies cover a broad range of skill sets uniquely linked to instructional technology practices. For example, one field observation note reported that:

Students needed some direct instruction from the teacher with respect to where to save files, and how to place images, how to jump between text boxes, etc... Other direct instruction that students needed were in respect to design issues, specifically font size, the length of the webpage, density of information (facts) presented on the webpage. In fact, some class-addressed direction included, “Guys, you’ve got to keep in mind design.”

Digital proficiencies and skill sets cover a broad spectrum in Ms. Stone's tech-integrated classroom. This spectrum is narrow enough to cover specific elements of tech-integrated instructional activities, such as where to save a document, but also broad enough in scope to include the need to practice the Spatial intelligence required to arrange an appealing visual display of unit-relevant content information in website format.

Of course, some digital skills can be as mundane as using the wheel function of a mouse. In my observations, I noted that students were able to use the "wheel scroll feature of the
mouse with ease if it was included on the mouse. This particular technologic innovation permits an easier fashion of browsing text than focusing in on the side nav-bar of web browsers or other software applications." The note continues to describe other digital skills "such as copying and pasting, resizing windows, and entering text...the class demonstrates with proficiency. I did not observe any students who could not follow the direct instruction from the teacher which required resizing windows, copying and pasting, or entering text." This finding from direct observation and teacher interviews indicates that MGLA students come to the classroom prepared with these digital proficiencies. Another digital proficiency that MGLA students already possess when they walk in the door of the classroom is the ability to 'right-click.' One field note reported that, "Students used the right click option often when editing their webpages." Instead of searching through potentially complex toolbars, students in this study demonstrated a more efficient manner to see what commands are available at a given point in a software application by right-clicking.

Quality website structure and appearance incorporated visual images and text to communicate a message in the medium of online narrative. I observed that "almost every webpage of the students contained at least one image from the net. Often, color was used as a background, and different color text for display information. Titles of webpages were centered, and often in bold or italics." In this example from the data, Spatial intelligence demands students to practice digital skill sets of moving around and re-arranging data, not only in relationship to images included on the webpage, but also in terms of color, font, font size, and background color. The tacit understanding here is that Digital Natives already are aware of such features of contemporary software applications, and expect themselves to be able to utilize such features when they design narratives with 21st century software tools.
The utility of mapping digital- and hard-copy based instructional activities onto each other is central to success with tech-integrated unit plans. Hard-copies of information serve as safety nets that are useful when technology crashes, such as when one inadvertently deletes an important file or when hardware fails. Scaffolded learning between hard-copy and digital resources was encouraged throughout the study:

One student who was behind in this group was assigned to a computer that sat apart from the rows of the main group. This student focused on finding information for the website and getting this text information over to the webpage application, Publisher. She surfed around from various websites based on a Google search, resizing windows with ease along the way. The student navigated through various windows displaying different information. This student followed the rubric as she discovered information on the net, using the handout as a guide for the information research process.

This observation traces a digital skill set (online information research) with a scaffolded instructional approach that utilizes a hard-copy worksheet for note-taking purposes. In this way, information collected is backed-up on a copy that cannot be deleted, only lost. The student was proficient in the use of resizing windows and moving across separate computer applications for the purpose of the activity. These are all critical digital skill proficiencies.

Other, more technical digital skill sets were also practiced during the course of the tech-integrated literature unit. One of these skills involved image resizing and placement into document creation and web design applications. For example, a student completed what was required of the rubric, but needed some direct instruction on how to place images in Publisher. Ms. Stone attended to the student who was able to follow such directions:
Did you insert the picture box prior to copying and pasting the picture? Click the insert picture box.

Which one’s that?

This one here.

OK

Now drag and drop it into where you want the image.

OK, like this?

Yes.

All right.

Now copy and paste your image in the box.

Right.

Image insertion into digital applications is an example of a challenging digital skill set that required Ms. Stone's modeling instruction for students to grasp the image-insertion procedure properly.

Another more technical digital skill set that students in the research study demonstrated, was the ability to alter the size appearance of text on the screen from 25% to 100% or greater in size. Two students opted to work on their webpage design in 25% of original size. One of these students was doing design work, but the other was entering text from this view. This permitted students to be able to envision their whole project page at a glance. Most students chose a 75% to 100% size information display size in order to see what they were typing. This preference by students to adjust their textual workspace to accommodate the particular goals of their review at the moment indicates a high level of familiarity with displaying information in current software applications, but also indicates that different views of information lend to certain ways of
reviewing said information for different purposes. Even though most students opted to display their information in 75% to 100% size, the fact that some students changed their view sizes indicates their awareness of the ability to do so, confirming proficiency in this particular digital skill.

*Unit Challenges*

Challenges endemic to this tech-integrated unit of literature study consisted of four major categories: (a) scheduling and time available; (b) student and teacher frustration with technology; (c) technology failing; and (d) student's failure to be prepared. Data sources for this claim include field observation notes, student questionnaires, and teacher interviews. One field observation note reported that "Time seemed to be a concern for some students. When reminded of the remaining time in the classroom, several students looked up at the clock to gauge their remaining work time." Recorded field observations also demonstrate that the teacher was concerned with time: "Ms. Stone reminded one student that she needed him to be working on adding content information to his website project, instead of 'messing with color.'"

Data also indicated the scheduling of technology resources as a challenge during the unit. When asked by the investigator about 'headaches' encountered during the course of the unit, Ms. Stone replied, "Just the headache of are there any computers available today. Which ones are they? How am I going to get my students there? OK, they're only available during this time, but they're with [another teacher] during that time." One field observation note expectedly reported that "Some laptops were not plugged in by the last users, which caused a shortage of computers for some students." In an example of user-error, one student made changes to her website that she didn't like, but inadvertently saved. This student had to redo the changes that
she had made in her website previously. Naturally, this was a source of frustration for this student.

Technology could also be a source of frustration for the teacher as well. Ms. Stone reported in her final teacher interview that "you always have that one plug that won't work when you need it to work. Or that light bulb that will go out as soon as you turn on the projector." Ms. Stone continued to say: "There's always technological problems. If you're going to be a teacher that uses technology you have to be ready for that and you have to have a back-up plan." In this way, instruction does not suffer when technology fails in the well-prepared MGLA teacher's classroom.

In respect to the specific technologies used during the course of the tech-integrated unit, Ms. Stone reported a disadvantage: "Just that I am unfamiliar with the program. This has been my first time using Publisher for web design. I have designed a website before, however I did not do it through Publisher. I used Netscape Composer the previous time." One disadvantage on the students' end of the unit was when they showed up unprepared for the day's activities. One field note recorded that a "student who arrived late did not have the handouts necessary to working on the website building project. Ms. Stone sent this student back to her room to pick up another copy of the handouts for his work that day." Apart from the common problem of student preparedness in any education environment, student's challenges seemed more focused on learning new technology or improving their skills with technologies they already knew.

Ms. Stone reported that planning was the greatest problem she had to solve during the course of the integrated technology unit of novel study. Ms. Stone commented that it “would’ve been easier” to integrate the technology used in the unit of novel study across the whole school year, instead of during just one literature unit of five weeks duration. Although planning when
students could take advantage of computer labs and the mobile laptop cart was a challenge, Ms. Stone reported that she believed that “it was worth” exposing her students to the technologies involved in the literature unit. She added that she would probably use web design activities again in her 7th grade instruction.

Although there were problems for Ms. Stone during the unit in terms of scheduling and proficiency of use with the particular technologies at hand, these challenges represent normal hurdles that appear in classrooms that opt to utilize technology resources available in their school. It is important to recall that the resource funding and allocation question enters the picture again since, if there were an Internet-connected laptop for every student, technology-sharing issues within schools may well disappear.

Using technology effectively is another hurdle that every user confronts when beginning to learn an unfamiliar software application. This circumstance can be a serious concern for teachers electing to integrate a new software application into their instruction, since the learning curve for emerging pieces of software can be substantial for new users. This finding underscores the fact that there must be proficient or better users in the class for given pieces of technology that the class will utilize during the course of instruction.

Discussion

Overall, the technology integrated unit plan was successful. Observation field notes, student questionnaires, and teacher interviews reported that students enjoyed the tech-integrated activities that they were required to complete for the unit. What’s more, across these data sources, students and Ms. Stone reported that using these technologies was fun for students. This researcher observed the students having fun and recorded the students stating, themselves, that they were having fun using the technologies required for completing the work of the literature
The effect technology had on the students is perhaps best summed up in Ms. Stone's own words when she describes how technology streamlines the act of writing for her middle grades students: "You put a laptop or some sort of word processor in front of a student and they're a completely different student in regards to writing. They see it as, they just don't see it as a task anymore. It becomes something that they actually can do." The research findings of this study indicate that technology can have this kind of a positive impact not only on the act of writing, but also with overall student motivation towards task-completion and in respect to simplifying teacher work-load.

Technology gives students an instrument that can help them learn in more facile, and sometimes, more productive fashions. Ms. Stone commented during the initial teacher interview that many of her students were overly self-conscious of their handwriting, and that the input device of the keyboard removed the issue of messy or illegible handwriting from her Language Arts classroom. Ms. Stone reported that students preferred to use a keyboard over pen-and-paper for writing purposes, and that she had not observed a significant discrepancy in proficiency and quality of composition between students who used a keyboard more than pen-and-paper for writing purposes. This finding supports the contention that quality student work can be found given whatever medium in which it is presented. Concordantly, one medium of expression for student work does not necessarily rank higher in terms of quality than another.

With the unit culminating projects, students were able to present the same quality information they would have found on Beverly Naidoo and Journey to Jo'Burg from hard-copy sources, in a current digital format that captures attention and displays information in-line with how people communicate using the net in the Digital Age. The process of accessing this broad range of information was simplified by broadband Internet access and web-savvy students. A
wide range of websites were consulted by students in order to find relevant thematic content and images for their web pages.

The integration of technology into curriculum enhances student opportunities for critical thinking and increases student chances to practice digital proficiency skills, besides streamlining some Language Arts skills like the writing process. Digital Natives today are more apt to be able to use current technologies better than those who are not exposed to them as frequently as emerging generations. Findings from the data of this study indicate high levels of student proficiency with current software applications. Student websites demonstrate quality information presentations which capture audience interest with images and text better than hard-copy reports. Data findings support the fact that student response to the tech-integrated unit of literature study was positive. Integrating technology into the curriculum of Ms. Stone's MGLA classroom improved and enhanced the educational experience of literature unit study for her students.
Chapter Five - Conclusion

The intersection of technology and education is an interesting crossroads today. There is a large body of professional literature surrounding the best-practice integration of technology into public education and core-content instruction. The continued development of technology means that there is a continued effect on education that technology produces. Accordingly, the purpose of this study was to explore this intersection of technology and education in a Middle School Language Arts classroom. The guiding question then, was "What are 7th grade student responses to a tech-integrated Language Arts unit of literature study?" Data from the study indicate that the answer to the question in this setting is complex but positive; that is, in Ms. Stone's classroom, technology enhanced the curriculum and helped to involve students. Certain relevant implications and trends can be identified in the data of this study for best-practice tech-integration in MGLA instruction. These implications and trends point to the study's conclusion that positive student interest can stem from quality, tech-integrated MGLA instruction.

Student Responses to Tech-Integrated Curriculum

Findings from the study support the conclusion that tech-integrated instructional activities completed during the course of the literature unit enhanced the instruction and learning for students involved with the Journey to Jo'Burg literature unit by harnessing positive student response to tech-integration in curriculum. One clear example of this finding lies in the culminating projects, the websites the students created. Students in Ms. Stone’s class were excited to learn how to create a website, and this excitement carried over into the study of the novel and related themes researched during the course of the unit. The act of capturing student interest so as that they are more self-directed to accomplish required education activities in a given instructional environment is no small feat. In this research study, the specific nature of the
Student Responses to Technology

Tech-integrated activities required for the unit managed to increase student motivation on the whole. Direct observation confirmed that students were excited not to be required to complete a hard-copy essay, presentation, or written activity for the culminating project of the unit. The digital nature of the culminating projects captured student interest and motivated them to perform well during the course of the unit.

Other, more specific examples of how students responded positively to technology-integration in the unit are present in the findings of the data. One fundamental impact technology had on enhancing the unit was through broadband access to the Internet. For example, students were able to discover a greater depth of understanding about ethnic backgrounds of people in Naidoo's novel because of the broad range of information available on these topics when they conducted online searches.

Student websites also benefited from the wide range of online images available on the web today, enhancing presentation design. Every student utilized images about South Africa, Apartheid, or Beverly Naidoo to decorate their web pages. Without the picture images and instantly-accessible, detailed information found on the Internet, students would have had to spend much more time researching salient information for their required unit activities if they had not had online access to digital archives. Internet access also permitted the students the opportunity to practice their critical thinking skills in respect to evaluating the quality of informational resources found on the Internet today, which is also a core-content NC SCOS MGLA goal. There is no question that the quality of information and images that students found on the Internet during the course of online research conducted during the unit were easier to find than hard-copy information, and were on par with or better in quality to hard-copy information available for student use.
Direct observation confirmed that many students reported the actual physical act of writing was easier when using a keyboard, mouse, and word-processing application rather than with a pencil or pen and paper. For example, using a computer to write permitted some students to compose their writing in a legible, user-friendly, and better-supported manner with a keyboard, grammar and spell-check than via hard-copy medium (that use pen-and-paper, dictionaries, or card-catalogs). Ms. Stone also confirmed that many students prefer to write on the computer rather than by hand.

From the teacher's perspective, the use of technology also simplified her work since student responses were typed (legibly) and spell-checked, thus reducing the teacher work-load normally associated with reading and grading written student responses. Across these examples of tech-integrated instructional activities, technology helped to motivate students to complete the work of the unit or made the work of the unit easier to complete in a quality fashion. Technology enhanced the instruction of the literature unit in practical, mundane, and exciting fashions as evidenced by these teacher and student responses in the data.

This study also reveals that tech-integrated activities enhanced the instruction of Ms. Stone's teaching Beverly Naidoo's *Journey to Jo'Burg*. Students were able to access a much greater detailed body of information than in the hard-copy library, and their interest was captured through their active involvement in the technology tasks. Student responses were positive and enthusiastic about participating in a tech-integrated literature unit that utilized webpage design, online information research, and common digital applications to complete the work of a regular literature unit of study. Both student questionnaire responses and Ms. Stone herself echoed this finding. From both the teacher's and students' perspectives, tech-integration made this unit of
literature study different and more engaging than those units that solely rely on hard-copy media for core-content instruction.

Besides students’ positive engagement in the tech-integrated unit of novel study, this study also revealed other significant responses. Students developed their critical thinking, digital and Language Arts skills as well. One of these skills included evaluating the merit of content-related information found on the Internet. The wide range of information found on the Internet increases the importance for students to consider and to determine the quality of content-related information before they use it in their presentations. In this way, critical evaluation skills had to be used by students who participated in the study in order to create quality digital information presentations.

Correctly moving information from a web-browser into another information presentation piece of software is one of the digital skills that students who participated in this unit needed to utilize in order to succeed in accomplishing the project. Learning and following the steps involved and necessary to copying and pasting information into specific presentation pieces of software (such as Word or Publisher) can require memorizing different transposing functions. With respect to copying and pasting or importing images into different presentation software, students who participated in this study had to learn how to do so for both Word and Publisher, thereby further developing their digital proficiencies.

It is important to note that standard Language Arts proficiencies form the basis for proper information presentation, whether in hard-copy or digital format. Paragraphs of information in the webpages still needed to follow Standard American English structure. Sentences needed to begin with capital letters; spelling and punctuation were also areas of practice for students who participated in the tech-integrated unit. Since the stylistic appearance
of the webpages centered on quality images and text found to support the student's vision of their presentation, the overall visual design and appeal of their presentations was another skill that students practiced during the tech-integrated unit.

Research Findings and Current Literature

Many of the findings of this study correspond with those of current professional and research literature on the subject of quality instructional tech-integration into educational practices. One such example of a finding that corresponds with the larger extant body of research literature is the fact that overall student responses to technology-integration for the unit were positive (Eagleton, et al., 2003). In fact, student interest was harnessed better by incorporating technology into the unit plan than otherwise excluding or minimizing the draw technology can represent to students for core-content instructional practice. This finding parallels claims from the current body of literature (Chen & McGrath, 2003; Insinnia & Skarecki, 2004).

Another finding of this study that aligns with the current body of literature is the fact that incorporating tech-integration into the course of the unit enhanced and improved core-content instruction for students involved in the study (Mishra & Koehler, 2006; Templeton, 2004). The tech-integrated nature of the study permitted students with an uncommon measurement assessment, the website culminating project, and greater depth of presentation because of the wide range of online information available to students via web searches. These findings echo the current literature's claims that online broadband access expands the spectrum of information accessible by students, as well as the quality of information available to them.

The tech-integrated instruction of the Journey to Jo'Burg unit plan permitted students in Ms. Stone's class with many chances to practice critical, digital, and core-content related skill
sets and proficiencies. One example of work students completed over and over again during the course of this unit that covers all three of these skill sets, was when they evaluated the relevance of a given piece of information from the Internet, cut and pasted that piece of information from a web-browser into Word, and insured that it fit properly into the immediate writing activity. As with the current body of research, this study found that the practice of critical, digital, and core-content skill sets and proficiencies occurs in tech-integrated models of core-content instruction (Barron, et al., 2003; Coggeshall & Doherty, 2004; Pope & Golub, 2000).

According to the literature, to integrate technology effectively into standard core-content subject matter instruction in any classroom is contingent on several factors. Many of the factors commonly mentioned in the literature were found in this study. Of course, the technology has to be available for use in the classroom (Cabuck, et al., 2004; Norris et al., 2003). Apart from this fundamental requirement, there must be proficient to advanced users of the technologies available to the classroom in the classroom sample itself; whether these users are instructors or students is important, since a teacher who cannot use available technologies in a given classroom cannot model the accompanying critical and digital skills necessary for such student development (Hand & Prain, 2003; Kajder, 2004). This study confirms that proficient to advanced users of technology work well as instructional guides and models for other less-proficient technology users. Ms. Stone's master abilities with the technologies integrated into the course of the Journey to Jo'Burg unit were essential to the overall success of the unit plan.

Implications for Classroom Instruction

The findings of this study indicate that technology enhanced and improved the instruction of Beverly Naidoo's 7th grade Language Arts core-content novel Journey to Jo'Burg at the Middle School level during the unit of literature study at the school. Student motivation
and interest increased when technology was adequately integrated into the instructional practices of literature study for this student sample. Technology integration permitted the development of critical thinking and digital proficiency skills for these students during their unit of study, apart from completing state-mandated core-content goals along the way. Although the potential for student frustration exists for some students when confronted with the requirement of learning a new software application or piece of technology, on the whole, students positively engaged with technology used during the unit.

Technology facilitates some aspects of teaching 7th grade Language Arts, such as the legibility of written student submissions; student confidence in creating a written document as permitted by technology; the 'wow' factor of working with technology for most students; the breadth of online information available to students; and the new formats in which information can be presented because of technology innovations (webpages, PowerPoint presentations). These benefits outweigh the disadvantages of failing to integrate technology into current core-content instructional practice.

Although tech-integrated instructional practice requires investment of time spent learning technologies to adequate points of proficiency for integrated use, the rewards for doing so for students and teachers are considerable. Teachers corral student interest and motivation with current technologies that permit uncommon learning arrangements, such as webpage creation for presentational purposes. Language Arts core-content development on the part of the student is demonstrated via a hand-written essay or a webpage. This research indicates that students in Ms. Stone’s 7th grade Language Arts class prefer to create with contemporary, rather than traditional, instruments. The findings of this research demonstrate that critical thinking and digital proficiencies are two indissoluble parts of digital instructional activities. In light of this fact,
core-content instruction can be enhanced by the inclusion of integrated-technology as part of standard pedagogic practice.

One important lesson the researcher learned during the course of the unit was that adequately knowing beforehand any software applications desired for use during in-class instruction is critical to tech-integrated instructional success. There have to be proficient users of a given technology in a classroom for that technology to enhance the particular, immediate instructional goals of the lesson. Otherwise technology might represent a frustrating hurdle to instruction, instead of a doorway to the latest formats of information presentation.

Implications for Future Research

Since the scope of this research was specifically focused on 7th Grade, Middle School Language Arts literature study via tech-integrated activities like webpage building, there remains a wide range of other core-content areas, exciting tech-integrated activities, and student age-groups that could be examined by professionals conducting research. Within different traditional areas of core-content K-12 public school instruction alone, there would be great variance in the manners in which technology achieves an integrated role according to subject discipline. The chance of tech-integrated core-content curriculum looking identical across subjects like Math, Science, Biology, English, or Foreign Languages is probably low to non-existent. Accordingly, there would also be different digital, critical, and content-related proficiencies and skills sets revolving around other areas of core-content.

As technology continues to be integrated into the work, education, and home spheres, examining the manner in which it influences growth and development in U.S. public schools becomes more central to current research. Given the dynamic nature of technology’s advance, the integration of technology into curriculum should also be dynamic. Theoretically, continued
research could address the specific digital and critical skill sets and proficiencies that the digital
generations of students possess. Other research might address how digital skill sets could be
extensions of emerging features of intelligence as it is influenced by the advance of technology.
The capacity for further research examining the effect technology has on education is as broad in
scope as the potential enhancements technology offers education.
References


Students Responses to Technology 85

Computers Inc. Web site:


APPENDICES
Appendix A

Initial Student Questionnaire

Technology Background Questions

Does your home have a computer that you use?
Yes/no

If you have a computer at home, does it have access to the Internet?
Yes/no

If you have a computer at home and it has Internet access, what kind of Internet access does your computer have?
Dial-up, DSL, Cable, I don’t know

Do you use Instant Messenger (IM) or online chat programs?
Yes/no

Do you use Instant Messenger (IM) or chat online with friends at home?
Yes/no

If you chat online with friends, what Instant Messenger program do you use?

If you chat online with friends, how often a week do you chat with friends online at home?
1 time a week
2 times a week
3 times a week
4 times a week
5 times a week
More than 5 times a week

Do you have or use a cell phone?
Yes/no

If you have or use a cell phone, do you Instant Message your friends with it?

   Yes/no

If you have or use a cell phone and you Instant Message your friends with it, how often a week do you Instant Message your friends?

   1 time a week
   2 times a week
   3 times a week
   4 times a week
   5 times a week
   More than 5 times a week

Technology-Integrated Unit Questions

Have you completed a Webquest before this unit?

   Yes/no

Have you written a document in Word before?

   Yes/no

Have you put together a presentation with PowerPoint before?

   Yes/no

Have you taken an online quiz before this unit?

   Yes/no

Have you used online translators before?

   Yes/no

Have you put together a webpage before?
Yes/no

Have you ever used Publisher before?

Yes/no
Appendix B

*Final Student Questionnaire*

*Technology-Integrated Unit Questions*

What are the top two technology-based activities that you liked the most during this unit? Why?

*Webquests*

What is one part of a Webquest that you don’t like? What is one part of a Webquest that you do like?

*Word*

What is one part of using Word that you don’t like? What is one part of using Word that you do like? Is writing a document in Word better than writing a report by hand? Why or why not?

*PowerPoint*

What is one part of using PowerPoint that you don’t like? What is one part of using PowerPoint that you do like? Is putting together a presentation with PowerPoint better than creating a presentation by hand? Why or why not?

*Online Quizzes*

What is one part of an online quiz that you don’t like? What is one part of an online quiz that you do like?

*Web-Based Language Arts Resources*

What is one thing that you like about online translators?
What is one thing that you don’t like about online translators?

*Webdesign*

What is one part of using Publisher that you don’t like?

What is one part of using Publisher that you do like?

Is putting together a webpage better than writing a report? If so, why or why not?

*Teacher Questionnaire*

Of the technologies used in this unit, which (if any) were new to you?

Of the technologies used in this unit, which (if any) were new to your students?

Of the following technologies, which do students in your class use most frequently?

Word

Excel

Powerpoint

Publisher

Online dictionaries

Online translators

Online information resources (Wikipedia, National Geographic.com, etc.)

Which technologies were the most challenging to use for students during this unit?

Word

Powerpoint

Publisher

Online translators

Online information resources (Wikipedia, National Geographic.com, etc.)

Which technologies were the least challenging to use for students during this unit?
Word
Powerpoint
Publisher
Online translators
Online information resources (Wikipedia, National Geographic.com, etc.)

Which technologies were the most exciting to use for students during this unit?

Word
Powerpoint
Publisher
Online translators
Online information resources (Wikipedia, National Geographic.com, etc.)

Which technologies were the least exciting to use for students during this unit?

Word
Powerpoint
Publisher
Online translators
Online information resources (Wikipedia, National Geographic.com, etc.)

With which activity do you estimate the students learned the most?

Southern Africa Webquest
Passbooks in Word
Presentations with PowerPoint
Webpage with Publisher

Were there problems you encountered during the course of the unit using technology?
Did students express frustration with using technology during the unit? If so, in respect to what particular technology or aspect of the unit?

Were students more likely to engage in instructional activities that utilized technology than non-technology integrated activities during the unit?

Were there aspects of learning made possible by utilizing technology in the unit?
Appendix C

Initial Teacher Interview Questions

Did you complete undergraduate work in teaching?
And what was that degree program?
So you graduated with a degree that was not middle grades?
And how long have you been teaching Ms. Nelson?
Are there other educators in your family?
Is there a particular reason why you chose this profession or why you teach?
Are you interested in continuing your education? Do you have a specific course of study in mind?
What kind of calendar schedule does your school follow?
How large is the school in terms of student population?
How is the student population divided up along grade levels?
How many 7th grade teachers are there?
How many 7th grade Language Arts teachers are there?
And what is the resource language arts teacher's role?
Where are the grade levels of different students physically located in the building? Is there a reason for this arrangement?
Is there a reason for this arrangement?
How is teaching the 7th grade structured?
And on this particular hall, there are how many teams?
And a team covers how many teachers, what subjects?
So you have a partner on this hall?

What annual evaluations do you use to measure student performance at the 7th grade level in the Language Arts content area? When do these tests normally occur during the school year?

You do have EOC's or EOG's?

When does that test normally happen?

As far as special populations go, does your school follow a mainstreaming, pull-out, or inclusion model?

What kinds of technology resources are available to teachers and students at your school?

You mention that there are three computer labs at this school, I've only seen one…

These computer labs all have computers in them, and any grade level, any teacher can use them?

What kind of computers are in the media center?

So are they using Windows programs?

And those other programs are content oriented, I'd imagine? Maybe a science program for the science instruction?

Does the school have a broadband Internet connection?

Do students have their own school email addresses?

How would you characterize the quality of the technology resources available at your school?

If you could outfit your classroom with any technologic resources, regardless of cost, what would you include in your classroom?

And why are those so important?

Do you see the use of a word-processor as enhancing writing skills even though it's not long-hand?

Anything else you'd love to have in this classroom?
What about Internet connectivity in this room?

You see technology as a facilitator, does it improve proficiency in the core content areas in which you have to instruct?

How many students are in your class?

How many male and female students are in your class?

What ethnic groups does the student population of your class include?

How would you characterize your own ethnic background?

Do you share these students with another teacher during the instructional day?

How long during the day are the students under your direct instruction?

Are the students ever involved in team-teaching instruction? If so, on average how often a week?

How would you describe your classroom in terms of technology resources?

Was the laptop provided to you by the school?

Do you feel that you have below average, average, above average, or superior technology resources in your classroom?

Do you feel that you have below average, average, above average, or superior technology resources available to you at your school?
Appendix D

Final Teacher Interview Questions

Had this class of students completed a webquest before in your class?

Was this activity totally new for the students?

How would you describe students' reactions to the Southern Africa webquest activity?

In what physical location did the students complete the webquest?

How did students archive the resources and information they found during the webquest?

Did students find other sites on the net apart from the ones that you provided that contained relevant Southern Africa information?

Did you find that students remained on or drifted from the task of researching information during the webquest?

How would you rate the quality of information that students found during the webquest?

Is there a comparable method for researching information relevant to a given educational topic in as efficient and as timely a manner as an online search?

Did you have any students that discovered inappropriate material online while working on their webquests?

Did students complete paper-based pre-writing activities for their Passbooks?

How would you describe students' reactions to creating the Passbooks in Word?

Did students include pictures found on the Net for their passbooks?

Did students encounter any difficulties using Word for this activity?

Do you think that students could have figured that out on their own?

What are some of the advantages or disadvantages for using Word with this activity?
What online program did you use to quiz students during the unit?

Have you measured students' performance with Blackboard before?

Did you find that the online citation application was useful for students?

In a time where citations and references can be provided to students by inputting the correct information into a web-based computer program, do you feel that understanding the proper order and structure of a citation or reference is less important, as important, or more important than it was prior to this digital resource today?

So you think that it's very important to cite your source but not necessarily as important to be able to from memory know the order of the citation?

Did you find that students used other online English informational resources such as dictionary.com during the unit? If so, what others?

Do they use the thesaurus feature from that site?

Where did students begin on the Net to find online content information or images?

What websites did students find useful for online research in regards to the unit and its content?

Did students find that Beverly Naidoo has her own website?

How would you describe students' reactions to creating their *Journey to Jo’burg* websites in Publisher?

How would you characterize student focus on the appearance of their websites?

How would you characterize student focus on the informational content of their websites?

Do you think that students did/did not have sufficient informational content to include in their websites?

What are some of the advantages or disadvantages of using Publisher for this activity?

Did you find Publisher intuitive? Hard to learn, easy to learn?
Did you find that the students had the same reaction to Publisher too?

Tell me a little more about these other two students who had previous web design?

And did you find that they would assist other peers?

Do you feel that those students who grasped the web design, the computer application easier than others perhaps, why? How is it that they understand it that much quicker?

Did any students want to incorporate movie or audio clips into their websites?

Do you think that students would like to post their websites on the Net?

Was the writing process itself something that slowed student completion of the website activity?

Do you find that having students complete a paper-based prewriting activity improves the overall quality of work they do when presented in a digital format such as Word or Publisher?

Are there advantages or disadvantages to using just Word for composition with your students?

What are some of the advantages or disadvantages of using just paper-and-pencil for writing composition with your students?

What are some of the advantages or disadvantages of using just digital (word processing, webpage design) applications for writing composition with your students?

What kind of reaction do you typically observe from students when presented with instructional activities that integrate technology?

What are some of the benefits that you noticed technology permitted students during the unit?

Do you find that students in your 7th grade class can type proficiently? What proportion cannot?

Do you find that students in your 7th grade class can use a mouse proficiently? What proportion cannot?

Do you find that students in your 7th grade class can navigate through several computer programs at once proficiently?
Do you find that students in your 7th grade class typically have more than one application active when they are working on a computer?

Do you find that students in your 7th grade class can cut and paste information or images proficiently between two computer programs? Are there any who cannot?

Do you find that students in your 7th grade class can follow directions that detail the use of menus, drop-down menus, and right-clicking proficiently? Are there any who cannot?

If you model a series of commands on the computer in a given application for students, do you find that they then can immediately repeat the sequence for the goal in mind proficiently on their own?

How many repetitions do students need on average to commit the steps of a given software task to mind?

If you model a series of commands on the computer between given applications on the computer, such as cutting and pasting an image or text from the Net into Word, do you find that students can repeat the sequence for the goal in mind proficiently on their own?

How would you characterize the more successful students in the class for technology-based activities in terms of visual, tactile, or auditory learning styles?

How would you characterize the less successful students in the class for technology-based activities in terms of visual, tactile, or auditory learning styles?

Do you notice that students with learning disabilities are as successful, less successful, or about the same in terms of using technology as those students without learning disabilities?

What would you do different in regards to the instruction of a tech-integrated unit such as this one if you were to use similar or the same activities again?
Do you think that a step prior to beginning web design that gathered all or most of the information necessary for a website would have helped students to create websites with quality informational content easier?

If a teacher assigns homework that involves a particular digital application at school, is it reasonable to expect that families might have this particular piece of software at home for students to use?

What would you change about the unit now that it's completed?

So you perceive a gap between what schools use for software and what the average family has out there to use at home?

What would you change about the unit now that it's completed?

Were there any other headaches?

And what do you think the biggest headache on the part of the students was?

Do you think that the students would want to do something like this again?

Is there anything else that you would like to add that have that we need to have on record?
### Journey to Jo’Burg Unit Plan

<table>
<thead>
<tr>
<th>Monday A/B Periods Meet</th>
<th>Tuesday A Day</th>
<th>Wednesday B Day</th>
<th>Thursday A Day</th>
<th>Friday B Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>30th – Introduce Southern Africa via Web quest on Geography (45 min activity)</td>
<td>31 - Work on Religion Project Homework: Reading on the Apartheid</td>
<td>1 - Work on Religion Project Homework: Reading on the Apartheid</td>
<td>2- Introduce the Apartheid via power point presentation. Make passbooks using MS Word template.</td>
<td>3 - Introduce the Apartheid via power point presentation. Make passbooks using MS Word template.</td>
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<tr>
<td>COMP. LAB Reserved</td>
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<tr>
<td>6 – House wide Raids Online Quiz - South African Geography using Web quest notes must be taken by the end of the day on Wednesday.</td>
<td>7 – Civil Disobedience Protest Songs, Poems, Speeches, Dances (Group Project given) Read sample poems, listen to sample songs, listen to sample speeches</td>
<td>8 – Civil Disobedience Protest Songs, Poems, Speeches, Dances (Group Project given) Read sample poems, listen to sample songs, listen to sample speeches</td>
<td>9 – Work on Group protest project</td>
<td>10 – Work on Group protest project</td>
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<tr>
<td>13 – South African Language Chart</td>
<td>14 – Introduce Journey to Jo’Burg</td>
<td>15 – Introduce Journey to Jo’Burg</td>
<td>16 – Read/Theme passages</td>
<td>17 – Read/Theme passages</td>
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<td>--------------------------</td>
</tr>
<tr>
<td>using online translation tools</td>
<td>- Introduce Themes – groups decide on Theme focus; read for passages that support theme.</td>
<td>- Introduce Themes – groups decide on Theme focus; read for passages that support theme.</td>
<td>Online Quiz – Apartheid, Nelson Mandela, Protest – taken at school; closed notes</td>
<td>Online Quiz – Apartheid, Nelson Mandela, Protest – taken at school; closed notes</td>
</tr>
<tr>
<td>translate South African language</td>
<td></td>
<td></td>
<td>CLASSROOM COMPUTERS</td>
<td>CLASSROOM COMPUTERS</td>
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<tr>
<td>COMPUTER LAB RESERVED</td>
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<td></td>
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<tr>
<td></td>
<td>14 – Introduce Journey to Jo’Burg</td>
<td>15 – Introduce Journey to Jo’Burg</td>
<td>16 – Read/Theme passages</td>
<td>17 – Read/Theme passages</td>
</tr>
<tr>
<td></td>
<td>- Introduce Themes – groups decide on Theme focus; read for passages that support theme.</td>
<td>- Introduce Themes – groups decide on Theme focus; read for passages that support theme.</td>
<td>Online Quiz – Apartheid, Nelson Mandela, Protest – taken at school; closed notes</td>
<td>Online Quiz – Apartheid, Nelson Mandela, Protest – taken at school; closed notes</td>
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<td>CLASSROOM COMPUTERS</td>
<td>CLASSROOM COMPUTERS</td>
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<tr>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>Read/Theme passages</td>
<td>Have book completed</td>
<td>Have book completed</td>
<td>Work on Web page using Publisher</td>
<td>Work on Web page using Publisher</td>
</tr>
<tr>
<td></td>
<td>Students have two to three</td>
<td>Students have two to three</td>
<td>Media Specialist to Visit and teach students how to use Publisher.</td>
<td>Media Specialist to Visit and teach students how to use Publisher.</td>
</tr>
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<td></td>
<td>passages from each chapter</td>
<td>passages from each chapter</td>
<td>LAPTOPS RESERVED</td>
<td>LAPTOPS RESERVED</td>
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<tr>
<td></td>
<td>relating to theme</td>
<td>relating to theme</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduce Theme project – Create a web site showcasing; novel; theme with passages from the novel; and symbolic images to support theme.</td>
<td>Introduce Theme project – Create a web site showcasing; novel; theme with passages from the novel; and symbolic images to support theme.</td>
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<tr>
<td>27</td>
<td>28</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Work on Web page using Publisher</td>
<td>Work on Web page using Publisher</td>
<td>Work on Web page using Publisher</td>
<td>Present Web Pages via Projector</td>
<td>Present Web Pages via Projector</td>
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<td>LAPTOPS RESERVED</td>
<td>LAPTOPS RESERVED</td>
<td>PROJECTOR RESERVED</td>
<td>PROJECTOR RESERVED</td>
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</table>
Table 1, *Journey to Jo'Burg* Unit Plan, contains the calendar of academic events as generated by Ms. Stone for the unit of literature study. This calendar was modified along the way to accommodate unanticipated delays such as technology failure or school assemblies.
Appendix F

Data Tables
Table 1

*Initial Student Questionnaire and Results*

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your home have a computer that you use?</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>2. If you have a computer at home, does it have access to the Internet?</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>3. If you have a computer at home and it has Internet access, what kind of Internet access does your computer have?</td>
<td>dial up: 6%, DSL: 43%, Cable: 23%, Do not know: 29%</td>
<td></td>
</tr>
<tr>
<td>4. If you have a computer at home, what do you use it most for?</td>
<td>surfing: 15, games: 11, schoolwork: 9</td>
<td></td>
</tr>
<tr>
<td>5. Do you use Instant Messenger (IM) or chat programs?</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>6. Do you use Instant Messenger (IM) or chat with friends while at home?</td>
<td>62%</td>
<td>38%</td>
</tr>
<tr>
<td>7. If you chat online with friends, what Instant Messenger program do you use?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. If you chat online with friends, how often a week do you chat with friends online at home?</td>
<td>1 x: 5%, 2 x: 5%, 3 x: 23%, 4 x: 32%, 5 x: 5%, &gt; 5 x: 32%</td>
<td></td>
</tr>
<tr>
<td>9. Do you have or use a cell phone?</td>
<td>73%</td>
<td>27%</td>
</tr>
<tr>
<td>10. If you have or use a cell phone, do you Instant Message people with it?</td>
<td>48%</td>
<td>52%</td>
</tr>
</tbody>
</table>
11 If you have or use a cell phone and you Instant Message people with it, how often a week do you Instant Message them?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>1 x</td>
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<td>31%</td>
</tr>
<tr>
<td>2 x</td>
<td>3</td>
<td>23%</td>
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<td>3 x</td>
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<td>4 x</td>
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<td>0%</td>
</tr>
<tr>
<td>5 x</td>
<td>1</td>
<td>8%</td>
</tr>
<tr>
<td>&gt; 5 x</td>
<td>3</td>
<td>23%</td>
</tr>
</tbody>
</table>

12 Have you completed a Webquest before this unit?

62% 38%

13 Have you written a document in Word before this unit?

100% 0%

14 Have you put together a presentation with PowerPoint before?

97% 3%

15 Have you taken an online quiz before this unit?

95% 5%

16 Have you used online translators before?

38% 62%

17 Have you put together a webpage before this unit?

65% 35%

18 Have you ever used Publisher before this unit?

95% 5%

19 Have you ever used an online dictionary before this unit?

86% 14%

20 Have you ever used an online citation machine before this unit?

68% 32%

21 Have you used a laptop before this unit?

100% 0%

Table 1. Initial student Questionnaire and Results, summarizes the technology-background questions asked and information reported at the beginning of the study. N = 37 student responses for this questionnaire.

Table 2

Final Self-Reported student Digital Proficiency

<table>
<thead>
<tr>
<th>Digital Proficiency</th>
<th>Beginner</th>
<th>Basic</th>
<th>Average</th>
<th>Advanced</th>
<th>Expert</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>15</td>
<td>4</td>
<td>34</td>
</tr>
<tr>
<td>Publisher</td>
<td>2</td>
<td>0</td>
<td>20</td>
<td>13</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>19</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Online Information Research</td>
<td>2</td>
<td>5</td>
<td>17</td>
<td>8</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>Cutting and Pasting Text</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>9</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>Images into Applications</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>18</td>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>Copying and Pasting Images</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>8</td>
<td>14</td>
<td>35</td>
</tr>
</tbody>
</table>

Table 2, Self-Reported Student Digital Proficiency, summarizes information reported by students in respect to their self-perceived Digital Proficiency levels. Total sample numbers for this information from the Final Student Questionnaire can be found in the Totals column of the table. This information is graphically represented in Appendix G, Graphs 2 – 8.
Appendix G

Data Graphs

Graph 1

*Student Digital Proficiency*

![Self-Reported Initial Student Technology Proficiency](image)

**Question**

Graph One, Student Digital Proficiency, summarizes background information on previous student technology use from the initial student questionnaire. \( N = 37 \) student responses for this questionnaire.

Graphs 2 – 8

Graphs Two through Eight are drawn from the final student questionnaire section where students reported self-perceived proficiency levels with various computer applications and cross-application processes (critical technology skills).
Graph 2, *Word Proficiency*

Graph 2, *Word Proficiency*, represents self-reported general student proficiency levels of the classroom sample with the Microsoft Word processing application.
Graph 3, Publisher Proficiency, represents self-reported general student proficiency levels of the classroom sample with the Microsoft Publisher webpage building application.
Graph 4

*PowerPoint Proficiency*

Graph Four, PowerPoint Proficiency, represents self-reported general student proficiency levels of the classroom sample with the Microsoft PowerPoint presentation application.
Graph 5

*Cutting and Pasting Text*

Graph 5, Cutting and Pasting text, represents self-reported general student proficiency levels for the classroom sample with the digital task of finding quality online information research.
Graph 7

Images into Applications

Graph 7, Images into Applications, represents self-reported general student proficiency levels of the classroom sample with the digital, multiple-application task of importing image files into other applications properly (such as Publisher).
Graph 8

*Copying and Pasting Images Proficiency*

Graph 8, Copying and Pasting Images Proficiency, represents self-reported general student proficiency levels of the classroom sample with the digital, multiple-window task of cutting- or copying-and-pasting image files between applications (*e.g.*, web-browser to Word).
Selected Student Webpages
The Theme Freedom in the Novel *Journey to Jo’burg* by Beverly Naidoo

Citations!

3-6-06


3-8-06
www.contemporarywriters.com/authors/?psauth244#top.

3-9-06
In 1964, Beverley Naidoo was imprisoned in solitary confinement, at the age of 21, for eight weeks because of her involvement with the anti-apartheid movement.

- Her first children's novel is *Journey to Jo'Burg* which was published in 1985.
- Beverley Naidoo was born into a white, middle-class family in Johannesburg, South Africa in 1943.
- There were a couple awards her books won and those are:
  1. The other award: *Journey to Jo'Burg* 1985
  2. Arts Council Writers’ Award—*The Other Side of Truth* 1999
  3. Carnegie Medal—*The Other Side of Truth* 2000
  4. Nestle Smarties Book Prize—*The Other Side of Truth* 2000
  5. Los Angeles Times Book Prize—*The Other Side of Truth* 2001

Beverley Naidoo wrote fifteen books, two of her books got awards.
Beverley Naidoo also wrote many plays, one actually featured in an auditorium. That was called "The Playground".
2000

5. Los Angeles Times Book Prize—The Other Side of Truth 2001

- Beverley Naidoo wrote fifteen books, two of her books got awards.
- Beverley Naidoo also wrote many plays, one actually featured in an auditorium. That was called “The Playground”.
- Altogether, she won 30 awards for all of her work (Plays that she wrote and the books she wrote) some just in general.
- She was in her last year of school when the Sharpeville massacre took place.
- Her first book of short stories for children was called “Out of Bounds—Stories of Conflict and Hope”
- Her favorite book when she was young was the famous book, “The Diary of Anne Frank”.
- Her first two children’s novels, “Journey to Jo’burg”, and “Chain of Fire”, were set against the apartheid in South Africa.
- In 1965, she was exiled from South Africa for opposing the Apartheid.
- Mandela was released when she was writing her third novel, and she was able to return back to South Africa.
- The dedication in her first novel says, “To all young people who wish to know more.”
- The Other Side of Truth is one of her most famous novels talking about the price that has to be paid for standing up to tyranny, the impact of politics on children, and the injustice and abuse around the world.
The Theme of Love of Family in the Novel Journey to Jo’burg by Beverly Naidoo

- She was born in Johannesburg, South Africa on May 21, 1943.
- She lives in Bournemouth with her two kids Sade and Nemi.
- At the age of 21 she put in prison.
- She spent 8 weeks in jail after fighting against racism.
- In 1965, she came to Britain as an exile.
- In 1985 she wrote her first book Journey to Jo’burg
- She began to her Journey to Jo’burg when her two kids was 5 and 10.
- She was prevented from visiting South Africa to research her second book.
- Here some other books she wrote: *Other Side of Truth, Out of Bounds, No Turning Back, Chain of Fire, Web of Lies*, and much more.
- She won the Carnegie Medal for the *Other Side of Truth* in 2001.
- She returned to South Africa following the release of Nelson Mandela from jail in 1993.
The Theme of Freedom in the Novel Journey to Jo’burg by Beverly Naidoo.

Theme Analysis

In the novel Journey to Jo’burg there are 4 themes. A theme is a statement about life that a writer makes through their art. For the most part, theme is implied and not directly spelled out. The four themes in the novel Journey to Jo’burg are Love, Freedom, Survival/Courage, and Racism/Prejudice. For my website I have chosen to focus on the theme of Freedom. This theme is an important theme in the novel because of its relationship to apartheid. The theme of Freedom relates to Apartheid because it was a very sacred and precious thing to many of the black South Africans. Freedom was something you could see but not touch, and that made the blacks rebellious and angry. They had a right to be.

To read a passage and it’s explanation on the theme, click the following links:

Passage ONE
Passage TWO
Passage THREE
Passage FOUR
Passage FIVE
**Summary of Journey To Jo'burg**

*Naidoo*

*Naidoo*

**Theme analysis**

Journey To Jo'burg is a very good book. The book is based on two kids that went on a journey to Jo'Burg To find their mom because their little sister was very sick. The main characters are Naledi, Tiro, Mma, Dineo, Grace, and Nono. On that journey they had some problems and they meet a new friend named Grace. Grace takes Naledi and Tiro to their mother, but the kids have to stay with Grace until tomorrow. The next day Mma gets on a bus with the kids and they head back home.

**Images**

Next day Mma gets on a bus with the kids and they head back home. When they get there Mma rushes Dineo to the hospital. There they have to wait until tomorrow to Dineo. Next Mma spends another night with the kids and leaves tomorrow so she won't owe anymore money. On the way to Jo'Burg the kids have encounters like passport raids, getting lost, and sometimes being confused about what bus to get on. It's a very good book and I recommend that you read it.