Digital Storytelling in the Classroom: Three Case Studies

by

Corrine Gordon

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved November 2011 by the
Graduate Supervisory Committee:

James Blasingame, Chair
Jessica Early
Josephine Marsh
Alleen Nilsen

ARIZONA STATE UNIVERSITY

December 2011

ABSTRACT

This study follows three secondary teachers as they facilitate a digital storytelling project with their students for the first time. All three teachers were not specifically trained in digital storytelling in order to investigate what happens when a digital storytelling novice tries to do a project like this with his or her students. The study follows two high school English teachers and one middle school math teacher. Each teacher's experience is shared in a case study, and all three case studies are compared and contrasted in a cross-case analysis. There is a discussion of the types of projects the teachers conducted and any challenges they faced. Strategies to overcome the challenges are also included. A variety of assessment rubrics are included in the appendix. In the review of literature, the history of digital storytelling is illuminated, as are historical concepts of literacy. There is also an exploration of twenty-first century skills including multiliteracies such as media and technology literacy. Both the teachers and their students offer suggestions to future teachers taking on digital storytelling projects. The dissertation ends with a discussion of future scholarship in educational uses of digital storytelling.

DEDICATION

This dissertation is dedicated to my husband, Kevin. You stuck by me from beginning to end. You gave me great advice when I needed it, and you knew when to back off when I needed that. You were my rock, and the person who took my side in all things that happened along this journey. Thank you for all of your loving support and unwavering confidence in my ability to succeed.

I would also like to dedicate this dissertation to my mom, Linda. You knew without a doubt that I would finish this dissertation. You were my cheerleader through the good times and the bad. Your support meant the world to me. Your enthusiasm and confidence always gave me the extra strength I needed, when I needed it.

ACKNOWLEDGMENTS

An undertaking such as this could not be tackled alone. I am grateful to the many people who mentored and supported me throughout the process. I would like to thank my committee for constantly pushing me to work beyond what I thought I was capable of accomplishing: Dr. James Blasingame for his encouragement and support, and the many hours you contributed to the completion of this dissertation; Dr. Alleen Nilsen for her warmth and guidance; Dr. Jessica Early for her advice and feedback; Dr. Josephine Marsh for her enthusiasm and contributions; and Dr. Lynn Nelson for his inspirational views on writing and humanity. I would also like to thank Dr. Stephani Ethridge Woodson for introducing me to digital storytelling; Johnny Saldana for teaching me how to be a researcher; and Dr. Tamara Underiner for helping me find my home in English Education.

I would also like to thank friends and family who walked portions of this journey with me: Dr. Sara Baraldi for her continual support and good advice; Dr. Anjanette Darrington for her friendship and camaraderie; Melissa Rivers for her friendship and encouragement; and Dr. Kris Ewing for encouraging me to go for my doctorate. I would also like to thank my group of “sisters” who have been there for all of the ups and downs. Last, but not least, I would like to thank my husband and family. I am blessed to have such a strong support structure. You believe in me; you stand by me; and you push me to be my best in all things! Thank you.

TABLE OF CONTENTS

CHAPTER Page

CHAPTER Page

CHAPTER Page

APPENDIX Page

LIST OF TABLES

CHAPTER 1

INTRODUCTION

Digital storytelling is the art of using multiple media forms, such as computers, camcorders, audio recorders, and cameras to tell stories. The stories are short, usually between two and ten minutes, and they focus on specific topics. Often, the stories are of a personal nature, but that is not required to fit into the genre of digital storytelling. The University of Houston hosts a webpage entitled, "The Educational Uses of Digital Storytelling," where Editor Bernard Robin states, "Digital Storytelling range[s] from personal tales to the recounting of historical events, from exploring life in one's own community to the search for life in other corners of the universe, and literally, everything in between." Communities and companies are using digital stories to accentuate the humanity and history underlying their organization. Individuals are using them to express and exemplify meaningful aspects of life. Teachers are using digital stories to engage their students and enliven their learning experiences.

The roots of digital storytelling are as far-reaching as communication itself. It is a digital manifestation of humans' need to connect with each other through stories. "…Storytelling is among the oldest forms of communication. It exists in every culture. Storytelling is the commonality of all human beings" (Collins 1). Humans use storytelling to communicate personal anecdotes, to share religious insights, to preserve historical events, and to suggest codes for behavior, among

other things. Digital storytelling merges the ancient art of storytelling with the latest digital technologies, such as computers, cameras, scanners, and music files.

Digital storytelling is a booming art form because it bridges ancient traditions and state of the art media. From Berkeley to Melbourne, digital storytelling communities are popping up all of over the place. One reason digital storytelling may be so popular is it gives the storyteller a voice, or at least a medium through which his or her voice can be heard. Joe Lambert, the founder of the Center for Digital Storytelling in Berkeley, California, suggests that the practice of personal storytelling is currently experiencing a renaissance. He sees this renaissance as a reaction to the century-long proliferation of one-way media communication, where radios, televisions, and movie screens talk at us but we cannot talk back.

> At the Center for Digital Storytelling, we believe we can use media, ironically, to overcome the more troublesome residual effects of our consumer media culture. The digital storytelling community has described the Internet and new media explosion as a release to a century of pent up frustration at being involved in a one way discourse, electronic media speaks at us but we could not talk back (Lambert xix).

By creating digital stories that invite response rather than consumption, society can reclaim the oral tradition and interactive communication.

I first became familiar with the medium of digital storytelling during my Masters Degree program in the Theatre department at Arizona State University. During the course THP 511: Improvisation with Youth Workshop, Dr. Stephani Woodson assigned the class a digital storytelling project highlighting the experiences of teenage students from the Child Protective Services foster care system. As a class, we created a movie that was a compilation of 10 students' stories. The piece was like a patchwork quilt of voices, entitled "Being Me: Through the Eyes of Youth in Foster Care." The film did an amazing job of capturing these students' voices. The teenage students themselves were the narrators of their own life stories. They shared their experiences in a way that was meaningful, honest, and insightful. Not only did the students tell their stories, but they also helped in the production, as well. Each student's style and interest really shined through their particular segment because they, along with graduate students, made choices about the recording, filming, and editing.

The project was challenging yet rewarding. The most difficult aspect of the digital storytelling quilt was learning how to navigate the movie making program, iMovie. Being iMovie novices, the other graduate students in my class and I had much to learn about the software. Although the program is meant to be user-friendly, it was somewhat challenging to learn iMovie's nuances. However, we persevered and many, if not all, of us felt a tremendous sense of accomplishment watching our finished digital story. As I watched all ten of the stories quilted

together and presented on a big screen, I felt a great sense of accomplishment as a budding new filmmaker.

Thrilled with this new way to help young people express their voices, I wanted to further cultivate these skills. I enrolled in a three-day intensive, digital storytelling workshop at the Center for Digital Storytelling in Berkeley, California. There I learned more about crafting digital stories, navigating Photoshop and iMovie, and editing footage. I also gained the confidence to try digital storytelling in the classroom.

While teaching for a large, K-12 charter school in Phoenix, I attempted a digital storytelling project with my sophomore English students. I had two honors English classes and one grade-level English class taking part in the project. We were reading *The Taming of the Shrew* in class, so I asked my students to create short movies that were thematically linked to the plotline of Shakespeare's play. My goal for the project was for my students to make connections from their own lives to Shakespeare's texts and themes. I also hoped that they would draw on some of their out-of-school interests and literacies by taking part in the project.

As a teacher, this was a true test for me. I was horrified that the project might fall flat on its face because I was stepping into the technology territory where I didn't have all the answers and I was not an expert. Luckily, my students rose to the challenge. Several of them shined as unexpected computer wizards while others, less computer

savvy, through diligence found themselves quite proud of their abilities to make a movie. They created funny digital stories that did an outstanding job of capturing the essence of the play. The project was a huge success and, fortunately, my worst fears were not realized.

This experience got me thinking about further classroom applications. It was clear to me from the success of our *Taming of the Shrew* project that digital storytelling is a terrific classroom resource. My students loved the project. I loved the project. And, my principal loved the project. But, as someone who had learned digital storytelling in both a graduate classroom and an intensive, hands-on workshop, I was still a nervous wreck while actually mounting a project with my students. What about a teacher who had not had any of these training opportunities? Surely, asking a non-tech savvy teacher to attempt a digital storytelling project might feel like asking an English teacher to teach Quantum Physics. Could a teacher, self-taught in the medium, be successful conducting a digital storytelling project with students?

Statement of the Problem

In a generation of cell phones, iPod's, video games, and computers, students have wide exposure to digital technology on a daily basis. An illustration of this point can be found in Microsoft Windows Live advertisement series, entitled "The Rookies," which depicts children using their program, Photo Gallery. The kids in the commercials are all younger

than 10 and the premise is that Photo Gallery is so user-friendly, even a kid can do it. Kylie, age 4, transfers pictures from her camera to a laptop, edits the pictures, and then emails them to her family. Adam, age 8, creates something like a digital story in his commercial, using still pictures, Photo Gallery, and a sound file. The message from Microsoft's campaign is that kids, at very young ages, are learning how to interact and manipulate digital media.

Research on literacy and digital media is plentiful (Gee; Tyner; Lankshear and Knobel; O'Brien; Kahn and Kellner; Banks, Searcy and Omoregie). Lankshear et al define the term *technological literacies* as, "…Social practices in which texts (i.e. meaningful stretches of language) are constructed, transmitted, received, modified, shared (and otherwise engaged), within processes employing codes which are digitized electronically, primarily, though not exclusively, by means of (micro)computers" (1997 141). Lankshear and Snyder cite the rapid digitization of schools as being unavoidable; nevertheless, teachers need to be wary of having a blasé attitude toward the incorporation of new media in the classroom. Teachers must learn how to effectively use the media in order to serve the purpose of learning not just the purpose of keeping up with new forms of technology (1997 xvi).

In his text, *What Video Games have to Teach us about Literacy and Learning,* Gee suggests that students are exposed to opportunities for good learning by playing video games. Gee does not claim that all video

games encourage learning, rather, he states, “What [kids] are doing when they are playing good video games is often good learning” (199). He defines good learning as being both active and critical. Active learning includes the ability to experience the world in new ways, the formation of new affiliations, and preparation for future learning. In order to be critical learning, Gee argues that the learner must be able to innovate or produce new ideas regarding the domain of the video games.

A prominent theme in the research is that students possess technological skills and knowledge that go largely underutilized in the classroom, encouraging a divide between a student’s in-school literacy and out-of-school literacy. The literature suggests that “a range of new literacies *not currently addressed by schools* are likely to become especially valuable…and truly eclipse much of what we have hitherto considered most important to an effective literacy education” (Lankshear and Knobel 74). Tyner supports this claim stating, “…schools remain at a loss to deal with [changing technologies], creating a disjuncture between school’s relationship to home, work, and play.” She calls for media education to be taught in schools that helps teach learners how to “decode, analyze, evaluate, and produce communication in a variety of forms” (228-29). O’Brien takes this idea one step further; not only will future literacy education most likely include familiarity with technology, but also as a result, students’ perceptions of themselves as learners will improve through the incorporation of their out-of-school literacies in the

classroom (30). While much of the literature supports O'Brien's claim that students feel a heightened sense of ability when their out-of-school interests are supported in the classroom and recognized as literacy-building activities, there are challenges that prevent it from being more widespread.

Anderson and Speck open their text, *Using Technology in K-8 Literacy Classrooms*, with an anecdote to illustrate one such dilemma. Two teachers, Milton and Wynette are seasoned educators with ten years left to teach before retirement. Milton is uncomfortable with the idea of computers in the classroom because he is not a computer-user and he does not have the time or money to devote to becoming one. Wynette has attended a summer computer training offered by the local university. She can sympathize, but states that computers are here to stay. Wynette wisely points out "…We can't just cruise out of our teaching career hoping that we don't have to become computer literate" (1). This anecdote illuminates a real concern that many teachers face—how to effectively incorporate meaningful technological activities into the classroom without being a computer whiz.

Lankshear and Snyder comment on the trepidation teachers like Wynette and Milton might feel when first implementing any sort of technology projects in their own classrooms. Common to nearly all of the classrooms they visited throughout their technological literacy studies,

> We found evidence everywhere of energy, hard work, and perseverance—often in the face of considerable odds—and a cheerful determination to construct purposeful activities involving new technologies. We were also impressed by the efforts teachers made in looking for ways to make things work and, in some cases, to overcome trepidation born of inexperience, using whatever human resources were available to get assistance and to go forward. (110)

Moving beyond the basic educational implementation of technology highlighted by Lankshear and Snyder in the quote above, what experiences would teachers have implementing a more complex computer-based project like digital storytelling? What would happen if a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time? There is a growing body of theses and dissertations written on varying aspects of digital storytelling but none that focus on teachers engaging in projects without being trained in the medium. The various graduate student projects that have been done on digital storytelling focus on one or a combination of the following topics: 1) teacher implementation, 2) literacy acquisition, 3) language learners, 4) empowerment and voice and, 5) building communities. The projects most similar to my study deal with teacher implementation.

The dominant focus of the above studies addresses how teachers feel about, and conduct, digital storytelling after being trained in the medium; however, it seems likely that most teachers would not actually have the opportunity to take part in a structured workshop or training at all. With funding for teacher training being what it is, it is more likely that a representative from the school or district might be sent to a digital storytelling workshop and then asked to show other teachers the basics. Additionally, the time required to attend a digital storytelling workshop prevents most educators from doing so. The average length of an intensive training is three or more days. The factors of money and time suggest that attending a digital storytelling workshop is a luxury most school districts might not be able to afford. Therefore, I believe my focus on teachers who have not taken part in an intensive workshop will address a hole in this limited, but rapidly growing, body of research.

Description of Study

The goal of this project is to discover what happens when a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time. The teachers chosen were not specifically trained in the digital storytelling medium so that I might discover what obstacles the teachers face and what strategies they invent and employ to overcome the emergent challenges. Realistically, resources and professional development being as scarce as they are, very few teachers

will have the training opportunities in digital storytelling I had, but would this prove insurmountable? Exactly how intuitive is the use of the latest computer software? And, how might the teacher-participants' previous experience with computer applications aid or confound them in a project? A study of the teachers' experiences preparing for the project and conducting the project with their students is intended to yield this information.

Research Questions

This study will begin with the following question: What happens when a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time?

a) What obstacles arise during the facilitation of a digital storytelling project?
b) If obstacles arise, what strategies do the teachers employ to get past them?
c) Were the strategies successful and/or useful?

Importance of the Study

As a teacher who has tried digital storytelling projects in my classroom, I believe it is a medium that has tremendous potential for use in the language arts and English curricula. Storytelling scholars suggest the process of telling stories helps enhance imagination, increase

vocabulary, improve writing skills, and engage critical thinking when used in the classroom (Collins and Cooper 11-17). Researchers of digital storytelling believe its process encourages problem solving, research, and organization skills (*The Educational Uses of Digital Storytelling*).

Digital storytelling is a highly accessible medium, but it can also be quite elusive. The process of using media to tell stories is familiar because of the proliferation of the television and the movie industries, but the ability to do so may feel technologically unattainable. I believe my project will discover how a small group of teachers feels about jumping into a digital storytelling project without training, and how those experiences can help guide other daring educators willing to take a leap into technology. Similarly, as students' out-of-school literacies expand, will our classrooms become irrelevant if we don't keep with the evolving technologies?

Limitations of the Study

Since all three teacher-participants in this project work for the same school, there may be a limitation to the generalizable nature of these findings. The school itself is a technology-driven learning environment with the inclusion of computer-based projects at the heart of its implicit values. All three teacher-participants have a fair amount of computer literacy from life experiences, and two of the participants have taught the majority of their careers in computer-heavy learning environments. Just

having taught all year for this particular school has given all three participants an unusually high proficiency with technology.

The teachers' awareness that they are being studied may also skew the findings. Knowing that they are being recorded and analyzed may lead them to conduct themselves differently than they might otherwise. It may also lead them to handle the facilitation of the project in a different manner than they might if they were doing the project unobserved. Teachers conduct a large percentage of their instruction behind the closed doors of their own classrooms. As a teacher, I always feel a heightened sense of performance, or being "on," when someone outside our typical classroom community observes my methods of instruction.

CHAPTER TWO

REVIEW OF LITERATURE

Although digital storytelling as an educational device has the potential to help teachers effectively meet both curricular standards and 21st century literacy skills, it has not been incorporated in the classroom as one might expect. Digital storytelling is a deeply multi-disciplinary activity and the inclusion of it in the classroom touches on a multitude of theories from an array of academic disciplines. Before discussing the inclusion of digital storytelling in the classroom, I believe it is pertinent to discuss the history and evolution of digital storytelling as an art form. That historical trajectory will lead naturally to an exploration of how digital storytelling has been used as an educational instrument; the impact on literacy and learning are logical branches stemming off of the conversation of educational applications. The study of literacy itself is a multifaceted academic discipline, and its relationship to digital storytelling is just as complex. Theories of new media literacy, technological literacy, visual literacy, media literacy, and information literacy are all important considerations in this project.

The History of Digital Storytelling

Joe Lambert published the text, *Digital Storytelling: Caputuring Lives, Creating Communities* in 2002. He is generally credited as the first

person to coin the term “digital storytelling” in a publication although Dana Atchley was an integral contributor to the evolution of this art form. The two began working together in 1986, when Atchley invited Lambert, both theatre artists in San Francisco, to collaborate on a show about Atchley’s life work: a collection of “roadside Americana and stories about offbeat Americans” (Lambert 6). The show was called *Next Exit*, and it was a one-man show with Atchley narrating a slide show with the stories and mementos.

With Lambert’s creative assistance, Atchley crafted and revised *Next Exit* many times over between 1986 and 1992, making not only the storyline of the show more cohesive and “transcendent,” but also making the technology more streamlined and prominent (Lambert 7). Lambert said, “Dana was an Ivy League trained graphic artist, and had over a decade of work in video, but his design approach [to the show] was for the most part transparent” (7). Atchley’s stage performance eventually evolved from a solo performance, with technology shifts being cued by a behind-the-scenes stage manager, to a one-man show, where he could control performance technology with MIDI software on a computer right from the stage. His innovative use of technology for performance encouraged others who were in the middle of San Francisco’s technology boom of the 1990’s to take notice. In a collaboration with Patrick Milligan, “an interactive authoring design professional, Patrick adapted Dana’s set backdrop design that had been accomplished with slide and video

projectors, and created a computer-based interface with Macromedia's Director tool" (Lambert 8). In 1992, inspired by the work he had done, the American Film Institute in Los Angeles invited Atchley to lead a workshop on crafting personal video stories.

Joe Lambert's artistic influence was behind much of the theatrical re-envisioning that happened with *Next Exit* between 1986 and 1992, but it wasn't until he joined Atchley for a weekend-long workshop, where he would learn more about the digital video editing software and the process of video production, that he truly saw the potential for the art form of digital storytelling. This was Lambert's first opportunity to create his own digital story. During this weekend, and during two more workshop weekends that followed in 1993, Lambert "felt something in the process that inexplicably moved [him]" (Lambert 10). He said he could find similarities to other art forms in the process of editing personal photographs and stories into film, but it was also not like any art form he had seen before either. "And even as the tools themselves frustrated me, I knew that this activity had a special power that could be shaped into a formal practice" (Lambert 10).

After Lambert assisted Atchley with the three workshops in 1993, digital storytelling became Lambert's primary professional focus. Between 1993 and 1994, Lambert moved into studio space that was adjacent to Atchley's and then they began offering a schedule of digital storytelling workshops. In 1994, Nina Mullen joined Lambert and Atchley, and the

three opened the San Francisco Digital Media Center. In 1998, they moved the office from San Francisco to Berkeley and renamed their organization the Center for Digital Storytelling (CDS). Concurrently, the CDS aligned itself with the University of California at Berkeley's School of Education and the National Writing Project. Additionally, Pearson publishing included curricular ideas from the CDS on how to use digital storytelling in the classroom. Since 1998, CDS has been leading participants through intensive workshops, in which they learn the digital storytelling software as well as how to tell a good digital story; Lambert's 2002 text covers the basics of what is taught in their 3-day, intensive workshops ("The Evolution of Digital Storytelling").

The Proliferation of Digital Storytelling

"The Evolution of Digital Storytelling" timeline found on the Center for Digital Storytelling's website lists four people who contributed substantially to the early development of educational materials in the late 90's: Bernajean Porter, Alan November, Mark Standley, and Jason Ohler, all of whom have gone further with their connection to the digital storytelling community by writing books and/or offering consulting services. Bernajean Porter has written a book entitled, *Digitales: The Art of Telling Digital Stories (2005)*. Porter also offers a wide array of consulting services headquartered in Colorado including intensive workshops on how to create and tell digital stories. Alan November has

built a successful consulting business located in Massachusetts, which offers instruction in educational technology. Mark Standley lives in Alaska and wrote *Digital Storytelling and iMovie (2004)*. He also leads workshops and presentations on technology in education and leadership. Jason Ohler has published a book called, *Digital Storytelling in the Classroom: New Media Pathways to Literacy, Learning, and Creativity (2007)*, as well as many articles on digital storytelling, educational technologies, and evolving notions of literacy. Beyond these first influential contributors, there is a growing community of academics who are deeply connected to CDS and are helping to move digital storytelling into mainstream awareness.

Participants from these intensive trainings and associates of the Center for Digital Storytelling have been inspired to begin their own digital storytelling communities and businesses around the globe. A directory of some of the digital storytelling communities in America, Australia, Canada, and the UK can be found on Dr. Helen Barrett's website. Dr. Barrett is a professor at University of Alaska Anchorage, who attended a workshop with CDS in 2003, and she now maintains a page on her website dedicated to digital storytelling. In addition to listing various digital storytelling communities, she shares links to digital storytelling resources and CDS-approved tutorials (Barrett).

Daniel Meadows is at the forefront of the expansion of digital storytelling in the UK, and it started with a visit to the CDS in 2000.

Working in collaboration with the BBC Wales (British Broadcasting Corporation) and Cardiff University, Meadows used digital storytelling as the cornerstone for the award-winning *Capture Wales* project that ran from 2001-2008, during which the citizens of Wales created nearly 600 digital stories, telling their own life stories. Like the proliferation of digital storytelling practitioners who leave workshops at CDS and start their own digital storytelling communities, Meadows mentions groups that have flourished around Wales, South America, and Norway as a direct result of taking part in *Capture Wales.* There seems to be something contagious about successfully creating digital stories that makes participants want to share it with their students and colleagues.

Another community of digital storytellers that is growing exponentially can be found in The College of Education at the University of Houston. Bernard Robin of the Instructional Technology graduate program has written and co-authored several articles on the use of digital storytelling with both teachers and students, including “The Expansion of Digital Storytelling into Content Area Instruction” (2009), “The Effective Uses of Digital Storytelling as a Teaching and Learning Tool” (2008), and “Digital Storytelling: A Powerful Teaching Tool for the 21st Century Classroom” (2008), just to name a few of his most recent. In addition to his publications, Rubin also oversees University of Houston’s website entitled the “Educational Uses of Digital Storytelling,” where they provide examples of digital stories, an overview of some of the tools available to

make digital stories, and guidelines for producing high caliber stories, some of the guidelines come directly from the Center for Digital Storytelling's *Digital Storytelling Cookbook (2007)*.

University of Houston's College of Education is also inspiring its students to get involved with digital storytelling. In 2009, Bernard Robin, along with Cameron White, and Richard Abrahamson co-authored an article describing the most recent evolution of how digital storytelling has been mainstreamed into the graduate Instructional Technology curriculum at University of Houston through "linked courses." Linked courses are two courses that are offered by two different faculty members but have "thematically and pedagogically" linked content (Robin). The course offering highlighted in the co-written article described linked courses that were rolled out in the fall semester of 2008 that brought together digital storytelling with a children's literature class. Robin, White, and Abrahamson state that the best reason to pair these two courses was not even predicted during the proposal or planning phases of the linked courses development; it became apparent during the first semester. "This brings them face to face with the newest trend in juvenile book publishing—the increasing connection between the printed book and corresponding websites and video games dedicated to the new titles" (Robin). Books like P.J. Haarsma's *Software Series* with the corresponding online game universe exemplify this emerging trend; although, telling stories with emerging technology is not a new concept.

Using Technology to Tell Stories

Tim DeForest's book, *Storytelling in the Pulps, Comics, and Radio: How Technology Changed Popular Fiction in America* follows the evolution of storytelling technologies through the first half of the 20th century, ending with the death of radio. DeForest claims that the oral tradition has evolved due to technology since man first drew pictures on cave walls. Cave drawings eventually gave way to man painting on city walls, which then gave way to canvas:

> We needed to move out of the caves in order to eventually have a Renaissance. We needed to have a Renaissance in order for Pope Julius II to hire Michaelangelo to paint the ceiling of the Sistine Chapel. We left cave painting behind because we had found more profound and meaningful ways of expressing ourselves. (3)

DeForest also mentions that the advances in industry led to advances in literacy as well, through the development of printing technologies. The invention of the printing press made books more affordable and readily available. Despite positive aspects of increased literacy and more meaningful modes of expression, DeForest contends that good storytelling is being lost through the rapid technological developments of the 20th century. He claims that poor storytellers can add in special effects and attractive people to mask poor story form (202).

Jason Ohler's essay, "The World of Digital Storytelling," echoes DeForest's concern for loss of good storytelling technique when technology is involved. "The problem for many students is their focus on the power of the technology rather than the power of their stories" (45). Ohler suggests that when teachers lead students through digital storytelling projects, it is vital that the focus of the project be on crafting solid stories first with use of technology coming only after the story has been written, revised, and orally practiced. Jason Ohler states that digital stories are an excellent way "to develop a number of digital, oral, and written literacies in an integrated fashion" (47). In his dissertation entitled, *Implementation of Digital Storytelling in the Classroom by Teachers Trained in a Digital Storytelling Workshop*, Bulent Dogan found that "the process of creating a digital story requires planning, revising, storyboarding, scriptwriting and editing," and it "can be used efficiently for teaching writing" (20). Dogan argues the above steps are required of all good writing, digital or traditional.

Troy Hicks, author of *The Digital Writing Workshop*, claims, "Nearly all writing today is informed by, if not created with, digital writing tools including websites, software packages, a variety of media sources, and networked communication. Thus, when we ask students to be writers in this age, we are inherently asking them to be digital writers" (11). He states that most teachers are using tried-and-true, instructional, writing methods, and they are just applying them to digital mediums, but this is

not enough. We cannot impact digital writing skills without incorporating "a mind-set that understands new literacies" (2). Hicks' book looks at the intersection of the traditional writing workshop model with new technologies "such as blogs, wikis, social networks, podcasts, and digital stories" (5). He finds it useful to incorporate a familiar instructional device such as the writing workshop model, with the exploration of new technology. Hicks found the teachers he worked with liked having that aspect of security as they tackled the less familiar. They were comfortable with the literacy that could be gained through the writing workshop model, which helped ease their worry about how educational the technology component might be.

At the heart of any classroom activity is the question: what will my students gain from this? Will this help them learn? Will this help them engage? Will it impact their literacy?

Literacy and Learning

The term literacy is often synonymous with the ability to read and write, although literacy scholars suggest that connection is an evolution of the term's meaning rather than the original conception of what it meant to be literate. Michael Clanchy writes that "Literacy is primarily a technology of which records are the end products" and reading and writing were in fact forms of new technologies in their own time (20). Tyner states, "Understanding about the essence of literacy, that is, its social and cultural

uses in specific contexts, is easily sidetracked in discussions about technologies. Literacy artifacts—the alphabet, the pen, the book, the computer—become metaphors for the diverse use of literacy and is vague promise of 'enlightened progress'" (17). The two concepts: literacy and evolving technologies go hand in hand. In fact, James Gee writes about what he calls "Plato's Dilemma" in which Plato complained that the new technology of writing was going to lead to a destruction of society's ability to memorize information. Plato saw writing as a threat to literacy because now citizens could rely on what they had written down rather than their own memories (Gee 1991). Literacy and new technologies are interrelated ideas. Tyner states, "A society shifts from the culture of the printed word into one dominated by the electronic confluence of image, audio, and text, studies about the uses of literacy in the past provide fascinating glimpses of the many faces of literacy" (24).

The type of literacy most often prized in schools is what David O'Brien calls "autonomous" or print-based literacy, meaning a student can read and write according to sets of standards. David O'Brien says, "High stakes testing, meeting standards, reading texts in approved core curricula, completing assignments in which you recall questions about sections of textbooks, are all articulations of 'autonomous literacy'," or a prescribed skill set that one is supposed to attain in order to be deemed competent (37). O'Brien claims it is detrimental to focus only on this type of print-based literacy in the classroom because it excludes many of the

examples of good learning that students are doing outside of the classroom, which encourages a divide between a student's in-school literacy and out-of-school literacy.

In fact a general theme found among contemporary literacy scholarship is that there is a divide between what is taught in the classroom versus what is needed in the "real world." NCTE calls for schools to bridge the gap between in-school and out-of-school literacy in their webpage entitled "Writing in the 21st Century," stating "We need to recognize that out-of-school literacy practices are as critical to students' development as what occurs in the classroom and take advantage of this to better connect classroom work to real-world situations that students will encounter across a lifetime." In the Pew Internet & American Life Project, project directors Douglas Levin and Sousan Arafeh conducted a 2008 qualitative study to investigate how middle school and high school students across the country view and use the Internet. In their report entitled "The Digital Disconnect: The Widening Gap Between Internet-Savvy Students and Their Schools," Levin and Arafeh claim that students feel their "educational use of the Internet occurs outside of the school day, outside of the school building, outside the direction of their teachers" (iii). Furthermore, "They want to be assigned more—and more engaging—Internet activities that are relevant to their lives. Indeed, many students assert that this would significantly improve their attitude toward school and learning" (iv). Students are gaining knowledge in the digital literacies with

or without the resources and instruction from schools and teachers. If we want to adequately meet our students' needs, bridging the digital divide is crucial.

The literature suggests that "a range of new literacies *not currently addressed by schools* are likely to become especially valuable…and truly eclipse much of what we have hitherto considered most important to an effective literacy education" (Lankshear and Knobel 74). Tyner supports this claim stating, "…Schools remain at a loss to deal with [changing technologies], creating a disjuncture between school's relationship to home, work, and play." Ian Jukes, author of *Understanding the Digital Generation*, suggests there is a fundamental difference between how kids process information and how their teachers and parents do. He illustrates the chasm with the following table:

Table 1: Digital Learners' Preferences vs. Educators' Preferences

Digital Learners Prefer	Many Educators Prefer
Receiving information quickly from multiple multimedia sources.	Slow and controlled release of information from limited sources.
Processing pictures, sounds, color, and video before text.	To provide text before pictures, sounds, color, and video.
Random access to hyperlinked multimedia information.	To provide information linearly, logically, and sequentially.
To network simultaneously with many others.	Students to work independently before they network and interact.
Learning "just in time."	Teaching "just in case."
Instant gratification with immediate	Deferred gratification and delayed

and deferred rewards.	rewards.
Learning that is relevant, active, instantly useful, and fun.	Teaching memorization in preparation for standardized tests.

Source: Jukes, Ian. "The Fluencies." *21st Century Fluency Project*. Web. 14 Aug. 2011. < http://www.fluency21.com/fluencies.cfm >.

Jukes acknowledges that not all teachers prefer the traditional model of education listed above, but he posits that the majority of teachers do. Tyner calls for media education to be taught in schools that helps teach learners how to "decode, analyze, evaluate, and produce communication in a variety of forms" (228-29). Students need to be taught how to be *producers* of technology, not just *consumers.* In order to become a producer of anything, one needs to understand it on a critical level: how it is constructed and its quality among like items.

O'Brien suggests that tapping into "digital media-centric competencies" would help change society's views of literacy as well as students' perceptions about their own academic abilities (37-38). Not only will future literacy education most likely include familiarity with technology, but also as a result, students' perceptions of themselves as learners will improve through the incorporation of their out-of-school literacies in the classroom (30). Literacy scholarship seeks to explain and close that gap, arming educators with both resources and methodologies so in-school

learning is actually preparing students for success *after* the classroom, not just success *in* the classroom.

Digital storytelling scholars argue that the act of creating a digital story bridges in-school and out-of-school literacies. Ruth Sylvester and Wendy-Lou Greenidge introduce their article on using digital storytelling to engage struggling writers by stating that the process of "creating digital stories invites students to employ old and new literacies" (284). They refer the New London Group's use of the term *multiliteracies* to describe the plethora of skills we must posses to be citizens of the technological age. They cite "technological literacy" (the ability to work with computers),"visual literacy" (the ability to decode images and icons), "media literacy" (the ability to use multimedia to create messages), and "information literacy" (the ability to gather and coordinate information from the web) as types of literacy that fall under the label of multiliteracies. Sylvester and Greenidge claim that these are the primary forms of literacy drawn upon when students engage in digital storytelling projects. Kathleen Tyner suggests that while it is useful to think about each of the branches of literacy individually, the real value of looking at multiliteracies is to study how they intertwine. "The key to understanding the changing landscape of contemporary literacy is to study the areas where the rationale, skill sets, and purposes of various literacies converge and overlap for clues to the common features, competencies, and pedagogies of literacy (60-61). Literacy scholars have identified an ever-growing array

of literacy categories including those listed above (technological, visual, media, and information literacy) in order to describe how various activities lead to different types of learning.

James Paul Gee argues that today's digital media offer excellent opportunities for learning. He has written extensively about the types of learning that can be gained from interacting with digital media, predominately playing video games, citing that not all video games encourage good learning, but there can be good learning happening during engagement with some video games. He states, "What [kids] are doing when they are playing good video games is often good learning" ("What Video Games" 199). He defines good learning as being both active and critical. "Three things, then, are involved in active learning: experiencing the world in new ways, forming new affiliations, and preparation for future learning" ("What Video Games" 23). Psychologist Mihaly Csíkszentmihályi claims that a positive aspect of playing video games is the experience of "flow," or a highly focused state of attention. Attributes of flow involve being able to reach small attainable goals in one sitting, getting instant feedback in order to refine behavior, finding a balance between tasks and abilities, and having a sense of control over situations (Girod). Many scholars suggest that there is a lot of good learning happening outside the classroom. And in fact, Gee says, "The theory of learning in good video games fits better with the modern, high-tech, global world today's children and teenagers live in than do the

theories (and practices) of learning that they see in school" (7). The idea that there is a growing distance between the type of literacy that is valued in school and the type that is required in the technologically evolving work place is clear in the literature. And the notion that our classrooms are losing effectiveness with each new technological invention is also clearly implied.

James Daly, former editorial director of Edutopia, George Lucas' educational foundation, discusses in an interview with Lucas the disparity between what schools are teaching and what students will need as citizens of the 21st century:

> Daly: It seems that there have always been two parallel paths in education. The first is the formalized path of the schools. The other is the knowledge of the street, the information gained outside of the school. Is the information students now gain outside the classroom more in touch with learning the language of motion and sound and graphics?
>
> Lucas: Students understand that they need to have these skills in order to exist in this world, so they're way ahead of us. Most kids relate to each other through music or graphics. They are regularly bombarded with images and sound. Most of their awareness comes through the language of moving images and cinema. That's why it's so important that they learn the language of it. ("Life on the Screen")

Nikos Theodosakis, author of *Director in the Classroom*, agrees with Lucas and Daly's claim that education needs to keep up with the evolving technologies in order for our schools to be effective. He argues that schools need to take advantage of the current technologies in order to prepare students to be digital citizens, but the emphasis should be on process and critical thinking rather than the instruction of specific tools. He reflects on the filmmaking tools he used 20 years ago; "Although I can laugh at the now obsolete technology that I used, the skills that I learned as a story teller and a communicator have stayed with me to this day" (27). Theodosakis posits:

> …We must change our own attitudes and our assumptions of not only what we teach our children, but also how we teach them. Because they will exist in a world of even more exponential and constant change than we now know, we must do our best to prepare them for being citizens who understand the learning process itself. (19)

In the forward to Theodosakis's book, Ian Jukes argues, "Today, children not only have to learn right-to-left, top-to-bottom, beginning-to-end, but they are also expected to be able to communicate with pictures and sounds, as well as they do with sentences" (10). Ian Jukes is a contributor on the 21st Century Fluency Project, and the website offers a compelling analogy. It states that when we first learn to use a new tool such as a pencil, our use of that tool is labored and can even hinder what

we are trying to accomplish. But over time, and with practice, we become so comfortable with the tool that our use of it becomes transparent and our creative process can flow through it unencumbered. This level of comfort is more like fluency than literacy. The website states, “To be literate means to have knowledge or competence. To be fluent is something a little more,[sic] it is to demonstrate mastery and to do so unconsciously and smoothly” (21st Century Fluency Project). In his book, Ian Jukes expands on this information claiming students need to be fluent in five areas to be effective digital citizens: 1) solution fluency, or the ability to spontaneously problem solve when an issue arises; 2) information fluency, the ability to find and critically evaluate sources and content; 3) collaboration fluency, “the unconscious ability to work cooperatively with virtual and real partners;” 4) creativity fluency, the ability to convey meaning through artistic choices; and 5) media fluency, the ability to interpret message in digital communication, as well as “create and publish original digital products” (65-66). Digital storytelling, as a classroom technology, draws on all five fluencies. Despite the usage of particular software, the real emphasis when creating digital stories is the 21st century skills that are drawn upon.

Reluctance to Use New Technology

It is not surprising that many teachers are hesitant to incorporate more technology into the classroom. It can be an intimidating feat. The

latest trends in digital media are outdated as soon as they become popular because the next version or newest device is already in the works. With technology evolving so rapidly, it is hard to stay current. In the chapter entitled “A Conversation with Dr. Caleb Paull” of Joe Lambert’s text, *Digital Storytelling: Capturing Lives, Creating Communities*, Dr. Caleb Paull states there is a long history of teachers resisting the implementation of new technologies in the classroom. He studied the history of technology use in the classroom and found that “historically, different technologies have been pushed into the classroom from above rather than in response to teachers’ desires or needs” (142). In other words, school administrators and governing boards have heightened the technological requirements for educators often without regard for the practical applications or the value, which has led to disdain and skepticism for new technologies all together, regardless of the potential educational value. One problem that comes with a top-down implementation of technology is it often forces teachers to assume the role of expert on programs and/or devices brand new to them. Teachers are accustomed to being the expert in the classroom, and when they are strongly encouraged to include new technologies in their classroom, teachers can find themselves lacking their typical level of expertise. Beyond that, their students often possess that know-how, which can be threatening for some teachers.

This reversal of expertise from the educator to the student is not just happening in the classroom; it is happening at home too. James Gee

states that kids are good with computers “sometimes because they play video games and that interest has led them to learn more about computers—when adults in the house are intimated by computers” (2003 38). Kids are frequently more computer-savvy than adults, and as Gee suggests, one reason may be because they play around with computers. They are willing to make mistakes and be unsure about exactly how to do it, whatever it may be. It seems many adults, on the other hand, turn to instructional guides like *Computers for Dummies* to help them navigate digital media for the first time, rather than playing around with it, and maybe that is why kids continue to be more adept at intuiting how to use new digital software and adults seem to have to work harder. This is a vicious cycle; computers are meant to be played with, and as long as we as parents and educators try to learn them through instructional manuals rather than interacting with them, we’ll never really be able to keep up with the continuous evolutions of software. We have to give our students strategies to tackle new software. They need to know how to critically problem-solve, how to apply their strategies.

Storytelling in the Classroom

Digital storytelling offers the opportunity to tinker with new digital media software, all the while working within the innately familiar tradition of storytelling. Rives Collins and Pamela Cooper posit storytelling is the one universal form of communication all humans share. They claim that all

societies, in all corners of the world, use storytelling as a mode of communication (1). Carol Lauritzen and Michael Jaeger state, “Each of our lives is a story, a living narrative of our existence” (36). It is through our stories that we are able to make meaning of the world around us, connecting new experiences to old ones. Roger C. Schank claims that stories are at the heart of our perception of intelligence and ability to communicate. “Our knowledge of the world is more or less equivalent to the set of experiences that we have had, but our communication is limited by the number of stories we know to tell” (13). He states that humans subconsciously judge other people’s intelligence by the relatedness of the stories they tell in response to ours. When we share an experience with someone, and they are able to access a comparable, or somehow connected story in response, Schank claims that we as humans view this as the person’s intelligence. “Knowledge, then, is experiences and stories, and intelligence is the apt use of experience and the creation and telling of stories”…To simply “understand the nature of intelligence we must understand the role that stories play in memory” (16). If these scholars are correct about the impact of stories and storytelling on learning, an examination of how they are used in the classroom is necessary.

Academically, stories are part of the curriculum in multiple ways and in nearly, if not all, content areas. Obviously, story form is a cornerstone of language arts and English curricula with the study of literature, literary elements, and creative writing. It is also the foundation

of social studies and history courses through the exploration of earlier people's experiences and life lessons. In math, storytelling can be found in the word problems and the application of mathematicians' learning. In art classes, from visual to performing, stories are conveyed through various art forms. In health class, stories about wellness and disease are shared. In science curricula, scientific processes are shared through narratives, as are the lives of the scientists. As Lauritzen and Jaeger suggest, stories are the foundation of our lives and the way we make meaning of our experiences and the world around us. Although, Tom Banaszewski claims that story is being pushed out of the curriculum altogether. "The entrenched model of segmenting the curriculum into Math, Science, Reading, and Social Studies has consequently divorced storytelling from its natural application to all areas of the curriculum" (23).

One of the educational values of using digital storytelling in the classroom comes from the focus on developing and telling stories, or "story literacy" as Tom Banaszewski refers to it. Tom Banaszewski is an associate of the Center for Digital Storytelling who has done his graduate research on the educational applications of digital storytelling. He "define[s] story literacy as possessing not only an understanding of the effective elements of storytelling and the skills to compose a coherent narrative, but also including an awareness and appreciation of the human desire to connect through story" (6). Banaszewski suggests that schools are not currently encouraging students to gain story literacy as he defines

it above; the writing standards do not require the development of personal narratives to the extent that digital storytelling requires. He states that "tool literacy," or the knowledge to use various forms of technology, has been prioritized above story literacy.

The problem with this priority structure, Banaszewski claims, is that the technological tools that students are learning in the classroom will most likely not be the same ones they actually use in the real world since technologies become outdated so quickly. "Improving the use of technology in schools demands moving away from tool literacy and towards the broader issues of how students learn to read, write, and communicate with the aid of technology and while participating in digitally mediated environments" (26). He states, "I believe that by supporting students' story skills (oral, written, and digital) through digital storytelling that schools are supporting the digital skills students will need to understand and communicated with in their immediate futures" (117).

In his interview with James Daly, George Lucas makes a similar claim. Although Lucas is speaking more specifically about storytelling in the visual sense, he is adamant that schools are not preparing students to communicate effectively using technology. Lucas states, "We must accept the fact that learning how to communicate with graphics, with music, with cinema, is just as important as communicating with words. Understanding these rules is as important as learning how to make a sentence work." In the same interview, James Daly states, "…There are rules for telling a

story visually that are just as important as grammatical rules or math terms, and you can test people on them as well." Lucas and Daly's call for a different perception of both teaching technology and modes of communication is echoed in Nikos Theodosakis' book. Theodosakis states:

> What is needed is a balance between the understanding of language, mathematics, science, social studies, and other curriculum with the ability to learn how to learn. This is why any learning that contributes to the development of process skills serves learners twice. First as a way to understand the content that exists in their world today, and second, as a way to explore, develop, and understand the learning processes that they will require forever. (21)

Assessment of Digital Stories

Engaging learning that helps prepare our students for their future lives is a principal goal for education, but assessing the learning involved with new projects is one of the main obstacles to using new technology in the classroom. Joe Lambert and the Center for Digital Storytelling discuss "seven elements" that need to be considered during the creation of a digital story:

Table 2: Center for Digital Storytelling--Seven Elements

Element	**Description**
1. Point (of View)	--The point you are trying to make with your story. --"Why this story, now, for this group of people?" (47).
2. Dramatic Question	--The underlying framework of a type of stories. The question asks, "Who did it? in a mystery, or whether the hero will make it in time in an action thriller? --"What we are really talking about with the dramatic question is a structural 'setup,' corresponding to a logical 'payoff'" (51).
3. Emotional Content	--Material of the story must have an emotional shift, or an up and a down. --"How we get past the hard part, and still get what we desire, this is what we want to know" (53).
4. The Gift of Your Voice	--Including a voiceover, with our own voice, lends to the intimacy of digital storytelling. --"…We have a complex interaction between following a story and allowing associative memories the story conjures up to wash over us" (54).
5. The Power of the Soundtrack	--The affect that music has on how we view visual

	imagery. --“We have come to believe that people now walk around with soundtracks running in their heads. Those soundtracks set the mood of our day, change the way we perceive the visual information streaming into our eyes, and establish a rhythm for our step” (55).
6. Economy	--This refers to the old adage: Less is more. --“Economy is generally the largest problem with telling a story. Most people do not realize that the story they have to tell can be effectively illustrated with a small number of images and videos, and a relatively short text” (57).
7. Pacing	--Drawing on a variety of pacing techniques (such as speeding up, slowing down, pausing, stopping) in the telling of your story is very effective. --“Pacing is considered by many to be the true secret of successful storytelling” (59).

Source: Lambert, Joe. *Digital Storytelling: Capturing Lives, Creating Community*. Berkeley, CA: Digital Diner Press, 2002. Print.

Many teachers do not know what to assess, so they draw on the skills sets they have traditionally used to evaluate the students’ mastery.

Troy Hicks, author of *The Digital Writing Workshop*, comments on using traditional measurements to assess learning with new technology. He uses Sara Kadjer's question, "Does doing something old with new technology mean that I'm teaching with technology?" to address this issue. Hicks answers Kadjer's question by saying, "Her [Kadjer's] answer, as well as mine, would be no. When we simply bring a traditional mind-set to literacy practices, and not a mind-set that understands new literacies…we cannot make substantive changes to our teaching…" (2). With new types of technology, targeting new types of literacy, educators must incorporate revised rubrics for assessment.

Troy Hicks offers an assessment rubric for digital stories in his text, *The Digital Writing Workshop*. He includes a rubric based on the Six-Traits model, and he includes specifics parameters regarding the assessment of digital stories, as well as blogs, wikis, photo-essays, and podcasts; however, since this dissertation is specific to digital storytelling, I only included the digital storytelling guidelines in the reprint (Appendix O).

Theodosakis offers two assessment rubrics in his text, *The Director in the Classroom: How Filmmaking inspires Learning*, both of which could be readily adapted for a digital storytelling project. The first he calls the "Basic Film Assessment" (Appendix M). The second rubric covers all aspects of production from "Development and Pre-production" through "Production," ending with "Post Production" (Appendix N).

Graduate Studies Revolving Around Digital Storytelling

The rapidly expanding body of research on digital storytelling as a curricular activity is an indication of its increasing acceptance in the classroom. Before 2005, there were about 100 graduate theses and dissertations written about pedagogy and digital storytelling. Between 2005 and 2011, that number jumped exponentially; there are now thousands focusing on varying aspects of digital storytelling in education. The focus of the research ranges from student empowerment and community building, to teaching enrichment and literacy acquisition. The projects that studied how teachers use digital storytelling are the most related to my project.

Tom Banaszewski was mentioned above in the discussion of story versus tool literacy. From Georgia Tech, Banaszewski's 2005 thesis is frequently cited in later studies related to teachers' experiences using digital storytelling in the classroom to date. He observed the extent to which teachers who had been trained by the Center for Digital Storytelling implemented digital storytelling projects in their own classrooms within a set amount of time after attending the CDS training. Out of the twenty teachers he interviewed, he found that many teachers experienced similar issues and challenges throughout the facilitation; he cites the focus on technology over story writing as one of the main problems. Banaszewski claims:

> We do not teach storytelling in schools, yet we place students in front of computers and tell them to create *Powerpoint* presentations, *HyperStudio* projects and *iMovies* without giving them the skills to do that successfully. We provide plenty of instruction in software (tool literacy), but fail to see that asking students to communicate information through the combination of text, images and/or audio on screen is in fact a form of digital storytelling that requires story literacy. (5)

He argues that digital storytelling positively impacts students learning because it provides a "meaningful context" for learning. "I remain convinced that literacy approaches driven by helping students learn to read and write in the meaningful context of their own lives will do more than programs marked by rigid skill acquisition" (17).

Bulent Dogan studied how teachers implement a project in their classroom after attending a summer digital storytelling workshop held at the University of Houston. In his 2007 dissertation, Dogan concluded that although nearly all teacher-participants were enthusiastic to try digital storytelling with their students at the conclusion of their workshop, few teachers actually did. He found that having enough time ranked as one of the top reasons why teachers did not lead projects with their students. Dogan cites the focus of preparing students for standardized tests leaving little room for projects like a digital story. He also stated that "access to technology" was the second most cited reason for not doing a project.

Under access to technology, he included availability of software and hardware.

Among the teachers who did lead projects with their students, Dogan found it was generally reported that the teachers "observed increases in certain skills such as technical skills, presentation skills, research skills, organizational skills, and writing skills…" (101). Dogan concluded that digital storytelling positively impacted students' 21st century skills, and he called for more studies to be led into the educational benefits. In 2007, he claimed a "dearth of structured research studies about this relatively new teaching tool [digital storytelling] and its potential use in K-12 schools" (8) and only "one study [Banaszewski 2005] to attempt to identify potential obstacles for successful use of this tool by K-12 teachers" (5).

This is what my project was developed to address: potential pitfalls and challenges teachers might face during the facilitation of a digital storytelling project with their students. I also included the aspect of teachers who had not attended a digital storytelling workshop because, given the current economic climate, I feel it is most likely that teachers trying technology-based projects like digital storytelling are doing so after hearing about it from a colleague, a conference presentation, or a professional development opportunity rather than after attending an intensive training in Berkeley or Houston.

CHAPTER THREE

RESEARCH METHODS

This was a qualitative study involving teacher-participant interviews, teacher-participant reflections, student-participant reflections, and researcher observations. The data in this study was used to create case study vignettes. Each teacher's experience was exemplified through an individual narrative, citing her specific challenges, successes, and suggestions for future projects. The data from all of the case studies were then subjected to a cross-case analysis or cross case-synthesis, where commonalities and differences were explored and discussed (Creswell; Merriam; Patton; Stake; Yin). I focused on the overall experience of the different teachers as they conducted a digital storytelling project with a class of students, seeking to gain insights into how future teachers might fare with a similar project.

This chapter depicts the process of data collection and analyses used in this study. The section begins with the choice of setting and participants as well as the procurement of consent and permission. Following the exposition of the project, the procedures of data collection are described and then, the emergence of codes and categories is explained. Chapter Three concludes with a depiction of the steps used to ensure validity of the study.

Selection of Site

The setting for this study was a charter high school in Surprise, Arizona, a distant suburban area of Phoenix, Arizona. The heart of Surprise is 30 miles away from the center of Phoenix, but there is little undeveloped area between the two. According to the city's official website, in December 2008, Surprise's population was just under 110,000. The population is comprised of the following ethnicities: 70% Caucasian, 21% Hispanic, 3 ½ % Black, 2 ½ % Asian, and 3% a mix of other cultures.

The setting of a charter school for this study was not incidental. Arizona has 454 charter schools statewide, enrolling nearly 91,000 students (US Charter Schools). According to the Department of Education, there are 1500 public schools in the state of Arizona, meaning nearly one out of four schools in the state of Arizona is a charter school offering alternative methods of instruction. Charter schools began opening their doors in 1991, when the legislation first passed in Minnesota. California and Colorado followed suit in 1992: and Georgia, Michigan, New Mexico and Wisconsin in 1993. The bill permitting charter schools was passed in Arizona in 1994, making it the eighth state to do so. Nationally, all but ten states now permit charter schools to function alongside the traditional model of district-based educational systems.

An additional factor drove me to conduct this research project in a charter high school, as well. All of my secondary teaching experience has been in an Arizona charter school, where project-based learning activities

were highly regarded. The administrators tacitly encouraged multi-disciplinary projects, especially those incorporating media and technology in innovative ways. The school's mission statements states, [we are] "committed to providing a safe learning environment rich in technology where students achieve academic and social excellence while solving real-life problems in a cooperative manner" ("HCLC Homepage"). Additionally, the availability of computers and software at the school where I taught was unusually high as the school's charter revolves around the inclusion of technology in most subject matter. I sought out a charter school with a similar educational mission for this project because of my perception that the school where I had previously taught would be enthusiastic about a digital storytelling project such as this, not to mention have ample resources. Advantage Charter School (a pseudonym) was selected as a match.

Advantage Charter School (ACS) is a branch of a national charter school organization, which "has 74 schools in 12 states and the District of Columbia" (ACS parent company). ACS in Surprise, AZ is a secondary school with 400 students from grades 7-11 in 2008. ACS's educational philosophy stresses the importance of preparing the student for life after high school. The value ACS's administration places on technology is explicit. The facility has two enormous computer labs called the Core Labs, both housing one hundred computers each, where four-to-five classes of varying subject matter, meet concurrently throughout the school

day. English, math, science, health, language, and history teachers lead their students through a computer-based program called Apex Learning. Ideally, the students do two-to-three days of direct instruction in a classroom with the teacher and then two–to-three days of interactive practice on Apex Learning in the Core Lab.

But, with tight classroom space and growing student numbers, the ideal is not always achieved. All three teacher-participants said they have been scheduled to teach their classes in the Core Lab, five days per week, for weeks on end. ACS has two additional computer labs that are called the Smart Labs. These labs are a quarter of the size of the Core Labs (approximately 40-50 computers), but offer specialized software for a multitude of artistic applications such as animation, graphics, and other hands-on digital arts media.

Selection of Participants

The three teacher-participants all work for ACS. I became familiar with ACS through a colleague referral. I sent a query letter to the principal of the school who put me in contact with the head of the English department (Appendix F). Being someone who has extensive experience incorporating technology into her curriculum, the head of the English department was immediately interested in the digital storytelling project. She recruited one other teacher from the high school English department

and a teacher from the middle school math department to also take part in the project, thus creating a convenience sample to be observed.

Participant A, who will be called Susan, was the head of the English department and the most veteran teacher in the study with 15 years of teaching experience in primarily technology-driven charter and private schools. Participant B, or Ava, was a first year English teacher with a fair amount of experience using technology, or someone author, Marc Prensky, would label a *digital native*. A digital native is someone who has spent his/her "entire [life] surrounded by and using computers, video games, digital music players, video cams, and all the other toys and tools of the digital age" (1). Participant C, or Maggie, was a seventh-year math teacher, who has extensive technology experience as both a digital native and a seasoned teacher at schools with abundant technological resources.

This study also included data from the participants' students as well. The data received from the teacher-participant's students came in the form of project-evaluation surveys, where the students were able to evaluate their teachers' presentation of the digital storytelling project as well as their ability to technologically support the students through the project (Appendix E).

Consent and Permission

The study underwent all university research approvals governing research with human subjects prior to beginning the study. Both teacher and student participants were provided information regarding the focus and scope of the project, his/her right to accept or decline participation, and the contact information for the researchers (Appendix F and G). Student-participants were asked to sign an assent form upon completion of their teacher evaluation forms and their parents were asked to sign permission forms (Appendix H).

Procedures for Data Collection

The methods incorporated throughout this project were qualitative (Bogden and Biklen; Creswell; Merriam; Patton; Stake; Wolcott; Yin). I used interviews, observations, and reflections to compose case studies, which were then subjected to a cross-case analysis. Robert Stake states,

> The real business of case study is particularization, not generalization. We take a particular case and come to know it well, not primarily as to how it is different from others but what it is, what it does. There is emphasis on uniqueness, and that implies knowledge of others that the case is different from, but the first emphasis is on understanding the case itself. (8)

My first goal was to create case study vignettes in order to know each of the particular cases well: what each one was and what each one did.

Merriam and Wolcott see case study research similarly. Merriam specifies, "…that case studies focus on a particular situation, event, program, or phenomenon. The case itself is important for what it reveals about the phenomenon and for what it might represent" (29). Wolcott asks, "What can we learn from studying only one of anything? Why, all we can!" (171). Merriam's, Stake's, and Wolcott's views of case study research guides my rationale for using a case study design for my project. My goal for this study was to come to know the particulars of a few, unique cases in order to study what they might reveal and represent for other teachers.

Once the individual cases were analyzed, I then conducted a cross-case analysis. Merriam explains the approach to a cross-case analysis:

> In a multiple case study, there are two stages of analysis—the within-case analysis and the cross-case analysis. For the *within-case analysis,* each case is first treated as a comprehensive case in and of itself…Once the analysis of each case is completed, *cross-case analysis* begins. A qualitative, inductive, multicase study seeks to build abstractions across cases. (194-195)

The cross-case analysis allowed for some generalizations to be made as they might pertain to other teachers using digital storytelling in their own classrooms.

According to Patton, "Qualitative methods consist of three kinds of data collection: (1) in-depth, open-ended interviews; (2) direct observation;

and (3) written documents" (10). Yin claims the most important reason to use "multiple sources of data" in case study research is the ability to triangulate findings; therefore, all three methods of data collection were included in my research design (98).

I interviewed each teacher-participant two times during the project: at the beginning and at the end. I began by interviewing each teacher about his or her background using the computer, including the specific software he/she would be using throughout the project (Appendix C). I also inquired about each teacher's comfort-level engaging with various types of digital media, such as cameras, music files, and computer software. The interviews conducted after the project focused on the specific research questions underlying this project (Appendix D).

Additionally, I asked the teachers to submit a weekly written reflection about their experiences with the project (Appendix B). The reflections focused on successes, challenges, and anecdotes from the previous week. The written reflections operated as both a type of interview and also a form of written document. "Direct quotations are a basic source of raw data in qualitative inquiry, revealing respondents' depth of emotion, the way they have organized their world, their thoughts about what is happening, their experiences, and their basic perceptions" (Patton 24). I hoped the participants would be more candid about their experiences in written reflections, which was why I included them to

supplement the two formal interviews. I considered the weekly reflections a form of written document.

I also collected various other documents from the teacher-participants throughout the project. Merriam sees the term *document* in a broader sense than Patton's specification of "written documents." Merriam uses "the term *document* as the umbrella term to refer to a wide range of written, visual, and physical material relevant to the study at hand" (112). Not only did I consider the written weekly reflections a form of document, but using Merriam's definition, I also used the assignment guidelines prepared by each teacher to help explain the project to her students. I included the digital stories created by the students. I also asked the students to submit written reflections about their experiences with the project. All of these forms of document were used in the analysis of the project.

Finally, I observed each of the teachers' classrooms on a regular basis throughout the duration of the project. "Observational data represent a firsthand encounter with the phenomenon of interest rather than a secondhand account of the world obtained in an interview" (Merriam 94). Walcott uses the term, "being there" (95). Bogdan and Biklen refer to qualitative research as being "naturalistic." "Qualitative researchers go to the particular setting under study because they are concerned with the *context.* They feel that action can best be understood when it is observed in the setting in which it occurs" (4). I observed the

natural setting of the teacher-participants' classrooms frequently throughout the duration of the project. During these observations, I looked for experiences with facilitation, unexpected obstacles, and survival strategies per my research questions.

Before the teachers began the projects with their students, I led them through an in-service, where I introduced both digital storytelling and Windows Movie Maker. The introduction to digital storytelling included some information about the art form, as well as an overview of prevailing theories about student learning and engagement. I left several digital storytelling texts with Susan, so the participants would have additional resources readily available. The introduction to Windows Movie Maker was a hands-on exploration of the software. At the outset of the in-service, I planned for all of the participants to create their own short movies using the many facets of Windows Movie Maker. However, we had our first run-in with a problem that would resonate throughout the project: the software had been "buried" in the computer by the IT department to keep students from easily accessing it. In order to complete the introduction, therefore, I projected from my own laptop and as a group we went through the creation of a group digital story. All three participants agreed that they wanted to make a digital story on their own at a later time so they had a solid grasp of both digital storytelling and Windows Movie Maker. In-service outline can be found on Appendix A.

Data Analysis

Through interviews, reflections, and observations, I collected evidence necessary to describe each of the teacher's individual experiences with digital storytelling in hopes of discovering how a larger population of teachers might fare while attempting to use the medium. Merriam describes data analysis as "the process of making sense out of the data. And making sense out of the data involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read—it is the process of meaning making" (178).

While the project was underway, I took detailed notes about what I saw and experienced in the field. I asked the teachers to wear a mini audio recorder during moments of direct instruction so I might hear how they set up the assignment and guided students through the facilitation. It was my hope to gain direct quotations from the actual participants in order to enrich my description of the cases. I recorded all interviews on the mini-audio recorder so I might be able to participate more actively in the conversation, rather than writing notes feverishly. Patton states, "In addition to increasing the accuracy of data collection, the use of a tape recorder permits the interviewer to be more attentive to the interviewee" (348).

Soon after each visit with a participant, I transcribed the data into computer-generated documents. Merriam says, "Data preparation involves typing notes, transcribing interviews, and otherwise entering the

data from which the researcher will be working" (167). She emphasizes the value of the transcription process claiming that "verbatim transcription of recorded interviews provides the best database for analysis" (88). Through the analysis process, I have found the transcriptions of the interviews and observations to be my most fertile resource for data. However, the literature is right to comment on the time investment required to do the transcription process. My experience supports Patton's claim that it takes about an hour to reproduce 15 minutes of audio footage, or a "4:1" time ratio (349).

Following the transcription process, I found myself with a sizeable stack of typed pages. The next step was to read and re-read the pages to get a strong sense of the data. "I begin by reading through all of my field notes or interviews and making comments in the margins or even attaching pieces of paper with staples or paper clips that contain my notions about what I can do with difficult parts of the data" (Patton 381). I wrote key words consistently throughout the margins as I read the material. Every time a topic of conversation would shift, I would note a key word in the margin. Those key words eventually became categories for analysis, or "coding categories" (Bogdan and Biklen 161). For the preliminary round of coding, Bogdan and Biklen recommend limiting the number of coding categories to "thirty to fifty." They suggest that a list of more than fifty categories most likely has "overlapping" categories (173). During this step of data analysis, I had a variety of general categories

begin to emerge. Some of these categories were teaching experience, comfort with technology, project preparation, actual assignment, instructing the software, student engagement, classroom management, student mentors, security settings, classroom resources, challenges, and help with software.

Using those general categories, I cut the transcripts into small strips that contained a single key word in the margin and the transcribed text that corresponded to that key category. I put the strips in piles with the same or nearly the same category listed in the margin. Those piles of similar strips were then taped to large sheets of paper so the data from like-categories could be viewed simultaneously. Then, I worked with each individual sheet of categorized data, commenting and questioning on the material. Merriam suggests, “You need to keep track of your thoughts, musings, speculations, and hunches as you engage in analysis. This kind of information might be interwoven with your raw data (as in observer’s comments in field notes), or it may be in separate files or memos” (165). I did exactly that. I reviewed the data in each category and then I wrote ideas about how each piece fit together and how the ideas might contribute to larger categories.

Throughout the coding process, I kept my stated research questions as my guiding structure for analysis. Merriam specifies that categories should be the “answers to your research questions” (185). Since the research questions were written in order to gain approval for the

research study to take place in the first place, I went into this study with some points of focus already in mind. Wolcott states, “From the outset, a researcher needs to have in mind some broad categories, however tentative, that provide sufficient structure to guide both fieldwork and deskwork.” Those categories should be broad enough to “subsume numerous minor categories, yet keep important distinctions visible” (202-203). In my research, the following six broad categories were observed: 1) School Culture, 2) Teacher’s Prior Knowledge and Experience, 3) Project Specifics, 4) Classroom Management Strategies, 5) Challenges, and 6) Suggestions for Future Projects.

Within each of the six broad categories, specific minor categories, or again as Merriam describes it, “dimensions” of each category began to emerge. Under the category of School Culture, minor categories such as school mission, curriculum, technology resources, and daily classroom operations became apparent. The category of Teacher’s Prior Knowledge and Experience divided into the topics of teaching experience, comfort and experience with technology, and hopes for the project. Project Specifics broke down to actual project assignment, preparation for the project, final project submissions, and assessment. Classroom Management could be divided into classroom strategies and how engagement impacts behavior. The category of Challenges included dimensions of saving work, school security software, and issues of time. The category of Suggestions covered the same basic properties found in

the Challenges category: saving work, school security software, and issues of time.

Table 3: Broad and Minor Categories for Analysis

Broad Category	**Minor Categories**
1) School Culture	a. School's Mission b. Curriculum c. Available Resources d. Actual Daily Operations
2) Teacher's Prior Knowledge and Experience	a. Teaching Experience b. Comfort with Technology c. Hopes for Project
3) Project Specifics	a. Actual Assignment b. Preparation for Project c. Final Project Submissions d. Assessment 1. Teacher Assessments 2. Student Assessments
4) Classroom Management	a. Strategies b. How Engagement Impacts Behavior
5) Challenges	a. Saving Projects b. School Security Software and Policies c. Time
6) Suggestions for Future Projects	a. Saving Projects b. School Security Software and Policies c. Time

Using the above broad and minor categories, I created case studies for each of the teacher-participants. Before describing each of the teachers, I begin by describing the physical setting of ACS, the school's mission, and overall impression of life at ACS. The narratives about each

teacher describe her individual experience with the project in regard to the categories of 1) Prior Knowledge and Experience, 2) Project Specifics, 3) Classroom Management, 4) Challenges, and 5) Suggestions.

After writing the individual case studies, I then discussed any generalizations that could be made from the cross-case analysis of the data. I analyzed these data by commonalities and differences among their experiences, employing what Robert Stake calls “data source triangulation.”

> For *data source triangulation*, we look to see if the phenomenon or case remains the same at other times, in other spaces, or as persons interact differently….Data source triangulation is an effort to see if what we are observing and reporting carries the same meaning when found under different circumstances. (112-113)

After creating the three individual case studies, I conducted what Merriam calls “cross-case analysis” or Yin calls “cross-case synthesis.” I approached the cross-case analysis by creating a cross-case matrix. “This procedure involves creating potential categories by crossing one dimension or typology with another, and then working back and forth between the data and one’s logical constructions, filling in the resulting matrix” (Patton 411). I put together the cut and pasted data I had for all three participants onto large posters, organizing the posters by the broad categories, 1) Prior Knowledge and Experience, 2) Project Specifics, 3) Classroom Management, 4) Challenges, and 5) Suggestions. Looking at

how the broad category data for all three participants coordinated or contradicted led to my ability to make some generalizations about how other teachers might fare if taking on a digital storytelling project in their own classrooms.

Member Checking and Validity

Throughout the study, I conducted member-checks with the teacher-participants and their participating students to ensure validity of data and representation.

> In a process called 'member checking,' the actor is requested to examine rough drafts of writing where the actions or words of the actor are featured, sometimes when first written up but usually when no further data will be collected from him or her. The actor is asked to review the material for accuracy and palatability." (Stake 115)

It was my goal to represent the teachers, classrooms, and experiences with as much reliability and validity as possible. I asked the teachers to verify my account of their experiences. I also asked the students to respond to a closing survey about their experience taking part in the project. The student survey was directed at corroborating the student's impression of how the experience went with the teacher's perception.

CHAPTER FOUR

FINDINGS

Advantage Charter School

Physical Setting

Advantage Charter School is located in Surprise, Arizona. It is a member of a "national family of charter schools." ACS's parent corporation currently operates 73 charter schools in 12 different states and the District of Columbia (ACS Corporate Webpage). ACS is one of a growing number of schools run by corporate educational companies.

The success of ACS's parent corporation is evident from the exterior of the facility in Surprise. The school building itself sits in the shadows of one of Surprise, Arizona's huge public schools, which might make the much smaller charter school look shabby. However, the close proximity actually has the opposite effect. ACS looks like a well-established school from the exterior. A green expanse of practice fields separates ACS from the public school next door. Property lines blur with the neighboring public school making it hard to tell whether the grounds belong to the charter school or the district school. Coupled with beautiful landscaping and a gorgeous, new façade, upon entry ACS looks like a top-notch school.

Like most schools, the main office is just inside the entryway. The principal and vice principal have offices to the left and members of the corporate parent company have offices on the right. Nestled between the

two sides of this organization's administration, sits the reception area of the school. This space suggests a more humble budget than the exterior. Everything is very clean and new, but there are signs of a company that is rapidly expanding. The walls are a bit drab and lack any real theme for the haphazard decorations. The interior of the school just feels somewhat thrown together and sterile. The front office is separated from the rest of the school facility by locking double doors. Once I have been granted access to the building, I am buzzed through the doors by the receptionist.

Inside the double doors, there is a short hallway, which halts at a "T" intersection with another hallway. ACS caters to students from 7th-11th grade. To the right, the hallway leads to the middle school area, and to the left, it leads to the high school area. The students share facilities such as the gymnasium, cafeteria, and computer labs, but overall, the middle school and high school students are separated from each other. The gymnasium and cafeteria are located in the middle of the building so both sides of the school can access the space without interactions. Both sides of the school are identical. Classrooms line the exterior walls in the front half of the building.

Computer Labs

The back half of the building is dedicated to three enormous computer labs. Two of the three labs are identical; each housing one hundred computers. These are called the "Core Labs" and one is

dedicated to the high school and the other is dedicated to the middle school. Each Core Lab is about the size of a gymnasium with computers lining all four walls and filling in the center of the space. Carpeting is clearly new and each computer has a cushioned office chair. One wall is dark burgundy and the other three are white. There are posters hung throughout including Matisse, Einstein's E=MC2, Dracula, US Map, Core Lab Rules, and various university pennants. The only thing that varies between the labs is the selection of posters, and I suspect those are provided by the faculty using the space. Overall, both labs are immaculate.

The third computer lab is called the "Smart Lab" and this houses fifty computers. The Smart Lab's computers are outfitted with higher-end artistic applications for graphic design, computer animation, and web design. These labs are supervised by an Information Technologist who leads classes on specific software applications and projects. The Smart Lab is a much smaller space than the Core Labs, but looks very similar.

At ACS, classes meet in both classrooms and computer labs interchangeably. Every time I visited the campus, the computer labs were occupied by three to four classes concurrently. None of the teachers have their own classroom; they all have a classroom partner, who they alternate with between the classroom and computer lab. All three participants mentioned that the trading between spaces does not work out perfectly. All three have found themselves instructing in the lab for weeks on end

without access to the classroom. The administration has found that some classes require the classroom space more than others; therefore, "bumping" some teachers to use the computer lab more often. Ava admits that it was hard as a first year teacher to go from what they teach you in school as far as classrooms go, to having a computer lab as a classroom. She says, "I thought to myself, 'This is not what a normal classroom looks like,' so it has been hard to adjust. But once I started adjusting, I've really gotten to see all that I can do in here" (Interview 3/31/10).

School Mission

Throughout the building, the walls are covered with the school's guiding principles: college, career, and life. There are bulletin boards and posters throughout the building with a large triangle showing one of the terms, college, career, and life, on each of the three angles. All three participants explain that ACS is not just a college preparatory school. Maggie says, "We are prepping them if they choose to go to college, or if they choose to go on with their careers right out of school. We're basically prepping them for the rest of their life" (Interview 3/24/10). Susan states, "It is college prep, it is career focus in the 21st century with information technology and computer skills" (Interview 3/24/10).

In addition to the mantra of preparing for college, career, and life, ACS also strives to guide students in what they call the "shared values of integrity, justice, and fun" as posted in multiple places throughout the

school. All three participants explain nearly verbatim that integrity means "doing the right thing when no one is looking." Justice means "treating each person the way they deserve to be treated, but that doesn't necessarily mean treating everyone equally," rather it is fair consequences for all behavior, good or bad. And, fun does not mean having a good time at school; under ACS's shared valued, fun means the ability to have a say and to contribute in school decisions. The administration and faculty instill the three shared values by including students on task forces. When decisions need to be made regarding all facets of life at ACS, students are asked to be a part of the decision-making teams. Maggie states, "We're teaching our kids to be communicators so they can stand up and say 'This is what needs to be done and this is how we need to do it.' It's not just their academic education; it is teaching them to be better people and teaching them to be productive community members and citizens" (Interview 3/24/10).

School Curriculum

ACS is a primarily self-paced, individualized learning environment. Susan describes it as distance learning in a brick and mortar building. The teachers set up class outlines that include all work to be completed and deadlines for each unit of material. The students then work online with digital textbooks and class websites at their own pace. ACS uses a line of digital textbooks produced by Apex Learning. Apex offers online

textbooks for all subjects taught at the secondary level. The faculty instructs students on new concepts, but then the students work individually on the corresponding lessons and activities from the text, asking the teachers questions or for extra support as needed.

At the outset of the school year, the administration made it explicit that they expected the faculty members to use Apex for 40% of their curriculum. All three participants shared that it was a struggle to actually meet the 40% expectation. They said that requirement actually changed mid-year when one of the administrators took over a math class for a teacher who quit. He quickly realized that it was not feasible to do 40% with Apex, so the administration has encouraged the faculty to bring in any technology projects they could to supplement the online text materials. Maggie said the administration has told the faculty, “You’re in the computer labs, you have to use it, find a way to use it” (Interview 3/24/10). She explains that coming up with alternative ideas to use technology is only half of the challenge, however. “When we use something besides Apex, we have to use a specific lesson plan format and submit it to the administration way before we do the actual project” so it can be checked for its meeting both state and ACS standards. “They want to know what our kids are taking out of it. They actually sit down and go over the assignment, project details, and rubrics with you.” Maggie shares that the administration really seems to encourage the faculty in their exploration of alternative technology projects, despite the advance planning required.

The template the faculty fills out to gain approval is called the “Joy of Learning” template. She shares that the administration is lobbying for a new digital textbook and creative projects initiated by the faculty give them more ammo so they can say, “Our teachers are doing something better without your program, and here’s the proof.” All three participants commented about how a digital storytelling project was an excellent way to use the technology, do something other than Apex, and engage their students; Maggie mentions, “Anything to get out of Apex is like a godsend for these students” (Interview 3/24/10).

Individual Case Studies

Susan

Prior Knowledge and Experience

Susan is the most veteran English teacher at ACS. At the time of the beginning interview, she was in her fifteenth year as a teacher. She characterizes herself as a “big computer-techy.” “I love working with technology. I’m constantly exploring new and different technologies, ways to use it, ways to apply it, things like that” (Interview 3/24/10).

Accorinding to Marc Prensky’s terms, *digital natives* and *digital immigrants,* Susan is categorized as a digital immigrant, or someone who was not born during the digital generation, but has later adapted to and adopted many of the customs (1-2). Since personal computers were not

publicly available while she was in college, she did not start using a computer until after she graduated from her Bachelor's program:

> We didn't get the personal computer, the internet really…, until after I had graduated from college and that was about the time I started teaching. So I have grown as a teacher as the computer has been more and more used in the classroom. I've gone from having only a lab, to a computer for each teacher, to now having a computer for each student (Interview 3/24/10).

Although, she didn't grow up using computers, she is very tech-savvy.

Susan's teaching experience has revolved around technology-based instruction. In her fifteen years of teaching, she has taught for a range of charter and private schools where technology and project-based learning were the underlying philosophies. The inclusion of technology in her teaching has been directly encouraged as a part of her professional development. "I've always done curriculum development. When I started teaching, project-based learning was in its infancy, so the kinds of projects we were teaching required us to use our passion and expertise in technology to make them work" (Interview 3/24/10). She and her colleagues have always had to devise and discover new ways to use technology as new technologies were emerging.

Susan is the kind of person who likes to jump into new computer software. She says she likes attending computer trainings, but in order to really learn new software, she has to get hands-on with it. "It was great to

have you [the researcher] come in and introduce us to Windows Movie Maker. It helped to be taught the basics. But then, I had to go home and work with it and try to figure it out myself, because that's just how I learn" (Interview 3/24/10).

Susan has even brought her own technology into an already technology-heavy learning environment. She runs a Moodle site, which is a course management site like Blackboard or eCollege offered through Open Source software. She set up the site at home and has gotten all of her students to submit their work on this site. She has also enabled several members of the ACS faculty to use the Moodle site as well. "I get very excited about bringing in new and different things to my teaching" (Interview 3/24/10). In fact, once I was put in contact with Susan, she was the one who did all of the legwork to get the digital storytelling project approved by the administration. She was always one step ahead of me throughout the authorization process. And then throughout the project, Susan was looking for additional software that she could use to supplement the digital stories. Not only did Susan ask her students to create digital stories using Windows Movie Maker, but she also asked them to add a 3-D digital image using a program called Google Sketch-Up. She taught the class both programs during the facilitation of the project.

Project Specifics and Final Projects

Susan coupled her digital storytelling project with utopia/dytopia literature. She had her classes read both *Fahrenheit 451* by Ray Bradbury and *1984* by George Orwell in preparation for the project. For their digital stories, Susan asked her students to create and describe their own idea of a utopia. In an assignment she has entitled the "Utopian Nightmare Project," Susan has the students working in groups of two and three in order to establish and illustrate their vision of a utopian society. She asks the students to reflect on the following social systems:

1) Government (Democracy, communism, etc)
2) Economics (Types of currency, good and services, imports and exports, etc)
3) Population (Artificial life/intelligence, immigration policies, etc)
4) Morality (Religious beliefs, human rights, etc)
5) Power Supply (Government-supplied or Individually-generated)
6) Media and Communications (Who controls and/or monitors TV, Media, Telephones, etc)
7) Social Structure (Families, Rites of Passage, Relationship configurations, etc)
8) Ecology (Terrain, Natural Resources, Climate, etc)

Each group of two to three students created their own utopia and presented their societies through a digital story. She coupled the group digital story with an individual paper component where each student wrote

a five to seven page paper comparing and contrasting his or her imagined society against those in *Fahrenheit 451* and *1984*, as well as his or her perception of today's society.

As far as specific guidelines on how to create a digital story, Susan simply told her students to answer the following sixteen essential questions:

1. What type of ecology would be the best and why?
2. How would we define a utopian society?
3. Why do people continue to pursue the concept of utopian society?
4. What role does chaos play in the creative process?
5. Why would your utopia exercise creativity, why or why not?
6. How do we form and shape our identities?
7. What are the essential liberties?
8. Does your government restrict rights to utopians? Why or why not?
9. To what extent does power or the lack of power affect individuals?
10. Why does your utopia have beliefs and values?
11. How do values and beliefs change over time?
12. How does conflict lead to change?
13. How might it feel to live through a conflict that disrupts your way of life?
14. What types of people are essential to building your community?
15. Can literature serve as a vehicle for social change?
16. What importance will media have in your utopia?

(See Appendix I for full Assignment Guidelines).

Beyond telling the students that she wanted them to use Windows Movie Maker to complete the project, there was very little explanation as to what a digital story is or how to navigate Movie Maker. She posted links to two digital stories on her Moodle course management site for the students, and she walked the class through the major components of Windows Movie Maker. Otherwise, she let the students toil with Movie Maker independently. Her choice to let the students experiment and explore the software individually may be informed by Susan's philosophy that the best way for her to learn new technology is by getting hands-on with it. As it was quoted earlier, Susan said, "It helped to be taught the basics. But then, I had to go home and work with the software and try to figure it out myself, because that's just how I learn" (Interview 3/24/10).

She spent the bulk of her time during my observations helping students one-on-one make sense of both the project expectations and software specifics. I observed her instruct five different students individually on the major components of Movie Maker during my first visit to her classroom. When I asked her about any group instruction she might have done for the entire class on Windows Movie Maker, she said she demonstrated the software once for the whole class, but since she doesn't have an overhead projector, it was nearly impossible to do anything other than let the kids figure it out and ask questions as needed. Susan stated that lack of technology resources has become a festering

issue at ACS since the expectations to use new technology are so high. She said, “Try teaching a whole class a new software without any way to project the step-by-step screen images. We have four overhead projects for the entire school” (Interview 3/24/10).

Susan’s students submitted a variety of digital stories. The vast majority of them did not have any audio due to issues that she experienced both with music files being deleted nightly and with difficulty splitting her students’ voice over files into individual clips. The quality of the movies ranged from quite polished to quite amateur. Even the best examples had extensive errors in grammar and spelling. This discovery made me wonder about adding in an extra step for peer review, editing, and revision. This issue ties back to Jason Ohler’s essay, “The World of Digital Storytelling,” where he states one of the main issues he sees with using digital storytelling in the classroom is the loss of good story writing for the sake of thrilling special effects. “The problem for many students is their focus on the power of the technology rather than the power of their stories” (45). Story writing definitely took the back seat to technology with Susan’s students.

The students were to describe their vision of a utopia for this project. She laid out very specific questions that she wanted them to answer throughout their digital stories. What resulted most often was a slide show of images that correlated to the students’ answers to the questions. And, without the audio tracks or voice overs, the stories lacked

intimacy and emotion, which is one of the most endearing qualities of a digital story. There are several videos that I will describe in detail to give a better sense of the project outcome.

Perficio Locus

Perficio Locus opens with a shot of land surrounded by water. The land looks like keys, or how an aerial shot of Dubai looks with long jetties of land extending out into the water, running parallel to another jetty of land. The student tells the viewer that this utopia is a marine-based ecosystem with canals and boats as the main source of transportation. This is followed with a spectacular image of a beachfront community with volcanic mountains on the horizon. The student explains that the utopia was formed after a massive war killed the majority of the citizens. As a part of the reconstruction, the surviving citizens made peaceful co-existence the cornerstone of the society. "The citizens now live in peace and try not to start wars" (Perficio Locus Video). Similarly, the society is based on socialist principles where all citizens earn equal wages, with jobs being evenly distributed so that difficulty of work load is balanced, or "equivalence" as the student calls it. "We need all kinds of jobs and people. There will be a nice place and something to work on from everyone" (Perficio Locus Video). Goal setting is prized in this community, as is creativity and the arts. The student cites that citizens will be able to create their own television shows, movies, and media in this utopia.

“Literature can definitely change people in our world…Books will make people start thinking” (Perficio Locus Video). Overall, this student’s vision of utopia includes equality, co-existence, and artistic endeavors.

Under H2O

This student’s utopia is a domed-city hidden underneath the Pacific ocean, obscured from outsiders and located specifically near an abundance of natural resources such as minerals. The student starts with an explanation of media’s role in the utopia: all citizens will have telephones that can only be used to access other citizens within the dome, and television and music are both available, but nothing “inappropriate” will be allowed (Under H2O Video). The video then describes the family unit, stating that monogamous relationships and traditional family structures will be the only type of relationships allowed, and families will be limited to 3 kids. The student then describes rites of passage, explaining that kids will be able to drive at 14 years of age, get a job at 15 years of age, and move out at 18. On the same page, the student states, “Theater and Arts—there will be none of this” (Under H2O Video). The society’s electricity will be provided by water-powered generators and “food is received from a machine that scans your tongue, and produces what your taste buds want” (Under H2O Video). This student’s utopia is a cash-less society, where credits are used as salaries and payment for merchandise. There is no cruelty allowed and if someone breaks the

rules, they will be “deported,” where the police take the criminal to a hidden dock and ship them back to the mainland. The main tenant of Under H2O is that “you can do anything you want, as long as you don’t break the rules” (Under H2O Video).

Nightmare Utopia

This utopia is the opposite of a nightmare, which is why it is surprising that the student chose to name it the Nightmare Utopia. The video opens with a beautiful image of a rain forest waterfall, nearly ensconced in lush trees and foliage. The student states that the utopia is located in a coniferous forest so there will be food readily available. This society grew out of chaos, so the utopia’s mantra is to maintain peace, even if certain personal liberties are sacrificed to do so. “Do whatever you want, as long as it doesn’t compromise peace” (Nightmare Utopia Video). There can be no conflict as that disrupts the peace. “In our utopia, we want there to [be] a peace that’s the same for everyone, but we don’t want everyone to be the same. That’s where creativity comes in—everyone is their own person” (Nightmare Utopia Video). Overall, this utopia stressed the value of giving up rights for the presence of peace.

Crows

This is the only video produced during Susan’s class that has an audio track. It is amazing how much audio lends to the overall production

value. Because of the music, this digital story seems far better than others from her class. This is a highly technological utopia, where all citizens give up free thought for the betterment of society. “The minds of the citizens are controlled so there is only one set of values and opinions;” therefore, there will be “no conflicts or disagreements” (Crows Video). In order to achieve this mind control, all citizens will have a machine that controls thoughts implanted in their brains. The student says his utopia will have the allusion, or a fake sense, of freedom. “No freedom of thought, nothing exists” (Crows Video). The student calls this a communist utopia, where everyone is equal; although with a picture of Adolf Hitler included in the digital story, I suspect he meant a socialist utopia rather than a communist one. The student specifies that religion will be banned in this utopia and women are not allowed to work. Rather a woman’s role is to raise the kids in which there is a 2 child maximum, and show them how to be model citizens and workers. The student ends his video by stating that the utopia will have a cap over it for weather control. Overall, the idea of controlled variables seems to underlie this utopia.

Classroom Management

Susan has a very laid back teaching style. She likes to joke around with her students, and she seems to have excellent rapport with them individually. Due to the nature of self-paced learning at ACS, as well as the use of enormous computer labs for classrooms, I saw no whole-class

instruction. The students arrived at various intervals during the passing period. They came directly into the lab and went to specific assigned seats. Susan had a list of course work options written on the board with corresponding due dates. As the bell rang signaling the start of class, Susan announced that students should get to work and that everything was listed on the board. After briefly taking attendance, she began to patrol the lab, checking in with each group of students one-by-one. During my entire observation, Susan did not stop moving. She rotated among the students continuously, checking in and answering questions.

At one point, student chatter became apparent. Susan made an announcement to the class, asking them to please quiet down. She reminded them that if they needed to speak to another student, they could always “communicate online.” I am struck by this suggestion as being an example of Susan’s acceptance of and immersion in using technology. The comment also strikes me as a paradigm shift in the fear of students’ potential to be off-task while using technological resources. Susan not only anticipates the students’ behavior, she embraces it as a form of classroom management. She uses the silent communication of emails to work for her by setting a tone of trust and responsibility among her students. This tactic also mirrors the workplace where it is often more efficient to communicate with colleagues via email, even when their desks might be a short distance away.

Overall, Susan's students seemed consistently on-task. Her use of clearly established classroom rituals such as assigned computers and posted class work, seemed to counteract disruptions. Also, her constant movement among the students appeared to minimize bad behavior. Her students were all contained visually, but they were spread across a large space. Throughout the class, Susan would be up to 100 feet away from another group of her students, but since she was always on the move, the students never really knew where she would pop up next.

Challenges

One of the major challenges that Susan faced during the project was locating Windows Movie Maker on the lab computers. The first time this issue became apparent was during the in-service I led to demonstrate Movie Maker for the participants. We were using the lab computers, and while we were trying to open the software, we found it missing from the Microsoft Windows menu under the "Start" tab. We tried to access if from the desktop, but again ran into the program being completely absent from the Windows menu options. During the in-service, I pulled out my laptop and led the demonstration using my own software. Susan took this issue directly to the IT department the day after the in-service. She informed them about the project and asked if Movie Maker could be made available on the lab computers. During an interview, Susan said, "If there is a place where the mission of the school does not meet the resources, it is here

because everything is locked down so tightly. Even things like Windows Movie Maker were hidden from the students' access because the administration feared the kids would 'just play,' rather than thinking, 'here's a tool that we can use for teaching and learning'" (Interview 3/24/10).

ACS, as well as many other schools, has security settings on technology that may in fact do more harm than good. Susan had to fight administration and IT for all of her supplementary computer resources. Even something with an explicitly educational application like Susan's course management software (Moodle) has been blocked. She spent weeks at the beginning of the school year convincing her administration to remove the firewall that kept her Moodle site masked on campus. She had to show the leadership team exactly what she had available on the site before they would allow it to be available to the students while on campus.

Susan tried throughout the entire project to get the IT department to make the Movie Maker link more visible on the lab computers. She was told several times that the IT department would put shortcuts to the software on the desktop, yet it never actually happened. Rather, Susan became skilled at directing the students to Windows Movie Maker through the internal directories found on the control panel of the computers. It was a several step maze to get to the program, but she was able to teach the other participants how to navigate the path as well. At the conclusion of

the project, shortcuts to Movie Maker were never made available in the lab.

Another challenge that Susan faced was the loss of pictures and music files that the students downloaded to use in their stories. Every night, the entire computer system at ACS undergoes a “scrubbing” process, where the hard drives across the entire network are returned to a set configuration. The school does this because they do not want the hard drive memory space to be clogged up by downloaded music and videos. The scrubbing led to major challenges with the students’ saved work. In order for Windows Movie Maker to show images or play a music file during the creation phase, it must be downloaded and present on the computer. Once the digital story is finished, there is a step to “publish” the movie so that the downloaded information becomes encrypted in the digital product, but that is the very last step in the process. When students returned the next day to work on their stories, their downloaded files were erased, therefore, leaving red X’s where images had been the day before.

A final challenge that Susan faced was the need to allot more time for the completion of the project. She originally budgeted three weeks for the project, despite my recommendation to schedule five weeks. She eventually wound up shuffling and revising the remaining units of study so that she could give her students another week and a half to finish their stories.

Susan remained very calm and laid back about all of the issues that arose during the project. In fact, she assigned another one of her classes a digital storytelling project while she was dealing with all of the complications with this group's projects. I must have appeared surprised that she would want to try another digital storytelling project while this one was giving her some challenges because she laughed and said, "Why should my older students be any less frustrated than these guys?" (Interview 4/9/10).

Ava

Prior Knowledge and Experience

During the digital storytelling project, Ava was in the final semester of her first year of teaching. She worked side-by-side in the computer lab with Susan all year, and she credits this opportunity for ongoing mentorship as being an integral part of making her first year a success. Ava said, for her, the hardest thing about teaching the first year was the division between what she expected her classroom to look like and the reality of teaching almost exclusively in a computer lab. "It was very weird to go from what they teach you in school that a classroom looks like, to having a computer lab. It's like, 'Oh, this is not what a normal classroom looks like,' so it's been hard to adjust" (Interview 3/31/10).

Going back to Marc Prensky's terms, digital natives and immigrants, Ava would be considered a digital native. She grew up with a

computer at home and in most of her classrooms. She doesn't consider herself to be especially computer-savvy, but she has a long-term familiarity with computers just from having grown up with them all around her. In fact, I asked her about her comfort with various forms of digital media such as digital pictures, music files, and movie making software in her beginning interview, and she initially expressed that she didn't have much experience with anything other than Word and the Internet. Although as the interview went on, it came out that Ava had a good deal of experience working with digital audio files when she served as a station manager for her high school's radio station and manipulating digital images when she worked as the Yearbook advisor. Compared to many teachers who would be considered digital immigrants, Ava was practically a pro when it came to working with the digital resources used in digital storytelling.

Beyond being quite computer-competent, Ava identified people around her who had very strong computer skills that she could ask for help. When asked how she felt about engaging with unfamiliar computer programs, she said, "I'm good with it, just because the kids are so quick at picking new programs up" (Interview 3/31/10). When she doesn't know how to work a piece of software, she asked two of her students for help, or she went to Susan. She said the best thing about asking students for help is it allowed her to draw on students with strong computer skills, who might not have strong reading and writing skills. "So it's good to also give

other students the lead and give students who might not be the best at reading and other types of instruction, it gets them to be leaders, too" (Interview 3/31/10). Ava's willingness to learn with the students permeated through her laid-back attitude about taking on the project.

Project Specifics and Final Projects

Ava coupled her digital storytelling project with Holocaust literature. Her students read *Night* by Elie Wiesel and *The Diary of Anne Frank* by Anne Frank in preparation for the digital storytelling project. Ava was able to get life story cards from the Holocaust Museum in Los Angeles with information about fifty different Holocaust survivors and non-survivors. She gave the information cards to each of her students, asking them to create short digital stories celebrating and honoring each person's life. Throughout her instruction of the project, she reminded students to keep the idea of "celebrating life" at the center of their stories. Obviously, this project has the potential to be incredibly heavy with emotional content, but Ava's ongoing reminder about celebrating life seemed to help keep the students' work from getting too deep. In addition to the life stories, Ava asked her students to include background on World War II, as well as specifics about any of the cities or concentration camps their particular person was associated with during his or her experience with World War II. The students created three to four minute movies telling the person's life story and experiences with the Holocaust.

Joseph Gani

This video was one of the few that had an audio track. The music was a little jarring in that it was upbeat, despite grim subject matter. The story was about Joseph Gani, who was living in Preveza in 1943 when the German troops invaded. The student included a map of Preveza, which is in northwestern Greece. The digital story showed images of Auschwitz, the concentration camp where Joseph Gani was sent. Gani was a sonderkommando at Auschwitz, which meant he worked at the crematorium. The video then followed with a string of images showing the gas chambers and ovens. On October 7, 1944, the sonderkommandos revolted against the Nazi soliders. Joseph Gani died at 18 years of age, after being moved to Birkenau.

Andras Muhlrad

This video is the story of Andras Muhlrad. Stylistically, the student's story begins with plain, black slides with white lettering. The student has added an effect that makes the slides look like a 20's movie playing through a reel-to-reel player. The student begins the digital story with an explanation of facism, explaining that race is valued above the individual. The student alternates between slides with images of World War II and slides with written text 1) telling Andras Muhlrad's story, 2) explaining aspects of World War II, and 3) describing Hitler's rule. He also talks about Hitler's attempt to speed up Darwin's theory of Natural

Selection by eradicating a race he felt was inferior. The slides telling the story of Andras Muhlrad share that he was born in Hungary in July of 1930. He was fourteen years old when the Germans invaded his town. His family moved to Yannos and lived in a house with 25 other Jews hiding from the Nazis. The house was eventually raided and Muhlrad was sent to Auschwitz. The student then goes into history about World War II including details about Normandy and D-Day, as well as information about the Allies. The student includes images of the Star of David, Swastikas, mass graves, German soldiers shooting Jewish prisoners, emaciated prisoners, bodies strewn across the ground. He ends with several images of Hitler.

Dorotka Goldstein

The digital story begins with the phrase, “Life as a Jew.” The student then has a slide with written text telling the story of Dorotka Goldstein. Dorotka was the daughter of the director of the Jewish Telegraphic Agency in Warsaw. She was one of three children in the family. The student follows this informational slide with an image of Dorotka Goldstein’s family. The student then goes back to Dorotka Goldsteins’ story explaining that since her father was influential in the media, he was targeted by the German soldiers. After he was killed, Dorotka, her mother, and her sister were deported to Stutthof Camp. The student follows this slide of written text with a collection of Holocaust

images: mass graves, a Swastika formed by a troop of German solders, prisoners standing behind barbed wire, and bodies stacked on top of each other. The student goes back to a slide with written text, explaining that as the Soviet soldiers closed in on Stutthof, the Germans began shooting the prisoners in the back. The student follows this written text with more Holocaust images: prisoners digging graves, prisoners being shot in the back, images of emaciated prisoners, and a map of Nazi concentration camps. The student goes back to Dorotka Goldstein's story stating she was shot but did not die. She was found 2 hours later by the Soviet army on May 9, 1945. Dorotka was the only one of her family to survive the Holocaust. The student ends the digital story with a slide that says, "Where was God?" followed by an image of bodies lying strewn across the ground.

Moshe Finkler

This digital story opens with images of Moshe Finkler, who was one of seven children in his family. He grew up in The Hague, Netherlands. He studied eight different languages. As German forces closed in on The Hague, Moshe and his family escaped to Belgium, hoping to pass as Christians. On April 7, 1944, Moshe and his family were celebrating Passover when Gestapo agents invaded their apartment and deported them to Auschwitz. The digital story then follows with a series of

Auschwitz images. Moshe died at Auschwitz when he was 18. The story ends with an extensive montage of Auschwitz and stacks of bodies.

Matvey Gredinger

This story has a somber audio track and opens with gruesome images of the Holocaust. The video then states that 350,000 people survived the Holocaust, and Matvey Gredinger was one of them. Matvey Gredinger was born in Vertujeni, Romania, and he was the youngest child. In 1933 and 1934, his family was harassed by Christians for their Jewish faith, causing the family to move to the capital of Romania in 1934. Matvey started working in a textile factory after completing seventh grade. The student stated that Matvey was shot in the neck by Soviet forces (I think he meant German forces). The bullet passed right through. He was left for dead on the street, and he escaped for the woods once the sun set. He was captured the next day and sent to a work camp in the Ukraine. He was freed in 1944 when the camp was overtaken by the Allies.

Inge Auerbacher

Inge Auerbacher was born on December 31, 1934 in Kippenheim, Germany. At 7, she and her family were deported to the Theresienstadt ghetto in Czechslovakia. The story includes images of the ghetto. She was then sent to Terezin Concentration Camp in Czechoslovakia when she was 8, which follows with images of the camp. Inge managed to bring

her favorite doll, Marlene to the camp with her. The student does not include the details of Inge Auerbacher's release from Terezin, but she later migrated to New York City. She graduated from Queens College, and then went on to spend 38 years as a chemist. In 1986, Inge Auerbacher published her novel, *I Am a Star: Child of the Holocaust*, which is a story about her childhood memories.

Classroom Management

As a first year teacher, Ava had already been confronted with many of the classroom management issues associated with taking students to a computer lab, simply by having taught in one all year. She had developed a few strategies throughout the year to help with student behavior. As the bell rang to signal the beginning of class, Ava's students came into the computer lab and went directly into a class huddle. The expectations for the huddle were clearly established and it seemed to be quite effective for getting the students on-task from the word "go." For the first three minutes, all 20 or so students stood in a tight circle, where Ava went over her expectations for their work completion, answered any questions the students had about the work, and reviewed upcoming deadlines. When she finished, the students moved directly to their computers and went right to work. Once her students were working independently, Ava maintained a strong presence in the lab. She moved from student to student continuously, answering questions, checking in, and curbing distractions.

In addition to the strategy of opening class with a huddle, Ava used peer mentors extensively. During my observations, Ava pointed out some of her purposely-paired students. She said that the struggling students really benefited from the proximity to the thriving students, and she said that her thriving students really benefited as well from mentoring their peers. From a classroom management perspective, this strategy not only served to have students help each other, but it also kept the faster paced students from becoming bored and distracted when they finished their work.

Ava used very solid classroom management strategies for a first year teacher. Observing her at the end of her first year, I was impressed with her command of the students in a non-traditional setting. In addition to using the huddle and peer mentors, Ava was very well-organized. She had her lessons clearly established, along with supplementary materials ready and on hand. On days that the class didn't begin with a huddle, the students were handed quizzes or activities upon entering the space and put to work even before the bell signaled the start of class. Ava didn't give her students a chance to start talking, and they seemed to be in work mode immediately.

Challenges

Ava ran into the same challenges that Susan ran into: not being able to access Movie Maker on the computers, losing students' saved

materials every night during the automatic system scrubs, and not being able to save work effectively. The one that was the biggest challenge for her class community was saving and re-accessing the digital movies. During the first week of the project, Tucker (*pseudonym), one of Ava's tech-savvy students, told her that they would start running into this issues saving and viewing. He had worked ahead and discovered that he couldn't work on the project at home and then later view the images when he worked on it at school. When he looked at the movie timeline, the spaces where the pictures had been previously located were replaced with white boxes with a small, red X. He quickly realized that in order to view the movies' images, they had to have a file with the pictures that were used loaded on the computer. Tucker said, "If we try to email [the digital story] to you, if you don't have the files saved on your computer, it's just going to show up as X's" (Observation 3/31/10). This was single-handedly the most frustrating aspect of the project for Ava.

Once the class started having these issues, Ava's stress level obviously rose. She empathetically understood how disappointed her students would be to put in so much work and to have so much engagement, only to lose the whole project. "The kids are going to freak out because they're actually enjoying this project and they want to show their work" (Observation 3/31/10).

Ava was very relaxed about the project at the beginning, but the challenges did start to get to her. Despite the challenges, she is an

incredibly resourceful teacher, and she demonstrated that by being able to find people around her who could help her figure out every issue she encountered. Ava has great coping and survival skills, which helped her handle teaching in a computer lab all year alongside four other classes. Those skills also helped her get through the project, even when it was its most stressful.

Maggie

Prior Knowledge and Experience

Maggie is the third, and final, participant in the project. She adds an interesting spin to the study in that she is a middle school math teacher rather than a high school English teacher as both Susan and Ava are. Maggie is a 7th year teacher at the end of her second year at ACS. She currently teaches middle school and high school math, but she has also taught second and fifth grade, as well as served as a Librarian while teaching overseas in Nigeria. Her first year at ACS was cut short by the pre-term birth of her son. She took a job with an online academy for the remainder of the year, and then returned to ACS this year, hoping to eventually get promoted into a curriculum development and administrative role. One of her favorite things to do with curriculum development is bring media into the classroom.

Maggie is a digital native. She remembers her family bringing home its first personal computer when she was in second grade. “I know I

was seven because I broke my arm the night before second grade started and so I did my homework on the computer because I could type it" (Interview 3/24/10). Maggie has used a computer extensively ever since. She is very computer-literate and she feels very comfortable working with them. She describes herself as a "break-it-before-you-ask-for-help kind of person" (Interview 3/24/10). In order to learn new computer software, Maggie must work with it herself. She has to push the different buttons, check out the different menus, and tries to do something on it herself.

Maggie had an opportunity to make a digital story, or at least a narrated, digital slide show, previously in her teaching career. During her last year in Lagos, Nigeria, she was asked to use iMovie on Mac to put together a few minutes of a digital story that described and illustrated that year's soccer highs and lows. After doing that project, she saw the potential iMovie held for use in curriculum development.

Project Specifics and Final Projects

As the only math teacher in this study, Maggie's project was not related to literature, but math concepts. As an English teacher myself, I was really interested to see what type of project she would come up with to explore math in a digital story. She chose to have her students pick a game; they could pick any game at all from video games, sporting games, board games, to card games. Once they selected their game, she challenged them to identify four different forms of math used in the game.

For example, baseball would include player statistics, performance averages, score keeping, and physics associated with batting trajectories, to name a few. The students then created one to two minute movies introducing their chosen game and illustrating the different types of math used in that game. Maggie encouraged her students to bring in music and images to further the digital stories.

Setting the time expectation at one-minute was quite effective for the outcome of Maggie students' digital stories. They were quick and to the point, and they were far more engaging than the projects from the other classes. In addition to the short duration of the movies, part of the heightened engagement also comes from the presence of audio in the videos. Having an audio track or a voice over really adds tremendously to the production quality of the stories.

Call of Duty: World at War

The digital story opens with a fast-paced classic rock song. The student states that it is hard to find examples of math in the video game, *Call of Duty: World at War*, but after looking, there are examples. The first one he notes is how many shots it takes to defeat an enemy. This statement is followed by images from the game that shows what a player sees as he/she moves through the digital world. He then says that it is easy to take down an enemy with a machine gun. The next example of math the student notes is the distance a bullet will travel before hitting a

target. He again follows this with an image of what a player would see with a target in the crosshairs. The third example of math deals with the angles involved with launching grenades. The student illustrates this idea with an image of a grenade. Finally, the student notes that the physics involved with planes crashing head first instead of tail first are part of *Call of Duty: World at War*. Overall, the imagery and music all contributed to the student's digital story.

Baseball

This digital story opens with a female student narrating her video about baseball. She starts with an image of a baseball with the team, Boston Red Sox on it. She follows this image with a glove and baseball. She overviews the four types of math included in baseball: number sense, geometry, statistics, and trigonometry. She has images to support all four types. She says the first type, or number sense, includes tracking runs on a scoreboard and any other numbers that can be found in the sport. The second type, geometry, has to do with the shape of the baseball, bases, and bat. The third type of math, or statistics, deals with all of the information found on the back of a baseball card, such as RBIs. The final type she mentions is trigonometry including the measuring the angles of a ball being hit and a bat being thrown into the air. She ends her story by posing the question, "Who says girls can't play baseball?" She follows this question with a few images of the early female leagues such as those

highlighted in the movie, *A League of their Own.* Overall, the video has a very nice production value. The student's voice over is well done and helps connect the viewer to the narrator right away.

Roulette

This digital story opens with an image of a roulette table. The video remains on this image for nearly 20 seconds, while the student narrates the types of math found in the game, Roulette. He cites that the calculation of odds is one type of math. He says there are many different considerations for odds found in Roulette including how many chips a player puts down, the chances of a certain number or color coming up, and the choice of specific squares that have a higher chance of winning, but yield a lower return. The second type of math the student discusses is the multiplication involved in figuring out winnings because certain squares pay more than others. A third type of math found in Roulette deals with the distribution of red and black numbers, as well as the chance of landing on the green zero. The video then moves from the opening image of the Roulette table to a close up of the wheel. A final type of math the student discusses is the money required to play Roulette. He illustrates this point with an image of a stack of money. Overall, this video has minimal images and complexity, but again, the voiceover adds a certain intimacy that helps the audience connect to the digital storyteller.

Classroom Management

Maggie is an incredibly laid back teacher. She teaches middle school students primarily, and has an excellent rapport with her students. She's nearly the same size as her middle schoolers, but she knows how to command the room. Her time spent teaching in the classroom and in the computer lab is distributed across the days of the week fairly equally. Half of the week, she covers several math sections with her students in the classroom, and then she has her students practice those concepts in the computer lab the other half of the week. The Apex online math curriculum is very well suited for students since it is a self-paced, individualized program. She gives her students a large amount of practice work while they are in the lab, and classroom behavior didn't seem to be an issue. Maggie said one of the keys to her classroom management is assigning multiple tasks concurrently so the students always have something else to work on, plus they have the choice of which activity they want to work on.

Another key to Maggie's seemingly effortless classroom management is her high level of organization. Maggie put off starting the project until after the students took the AIMS tests. She also didn't want to start it until she had an opportunity to draw up all of the instructional materials she would need to complete it, including notes home to the parents, rubrics for assessment, and plans for instruction. That might sound like what any teacher would do before starting a project, but having the time to do so is often a luxury and prevents teachers from trying

something new. Maggie says one of the reasons teachers at her school haven't tried more technology-based projects is because of all the planning that has to be done at the beginning, calling it a "catch-22" (Interview 3/24/10). The administration really encourages the faculty members to come up with new and different ways to incorporate technology into their curriculum, but in order to do something unusual, the administration requires lesson plans, assessment rubrics, and standards targeted well in advance of facilitating the project.

> They call it the 'Joy at School' template. It goes back to our shared values. It's amazing, but you have to have everything you need for the project done way beforehand so you can submit it to [the administration]. They analyze it to make sure it's meeting not only AZ standards, but ACS standards. They want to know what the kids are taking out of it. They actually sit down with you and go over everything. You have to have your rubrics. You have to have everything done beforehand, but it causes you to be very prepared which saves so much time in the long run, and I swear it's the key to my success with stuff like this. (Interview 3/24/10)

As an outsider observing a middle school classroom, I noticed that it ran like clockwork. The students came right in and started working on their computers. There was a little bit of socializing, but overall, it was very smooth and self-driven by the students. Maggie chatted with me casually

while they came in and got right to work. She never even signaled the start of class, the kids just knew what to do.

Another trick that Maggie uses to promote easy classroom management while working in the computer lab is music. She lets her students listen to their headphones while they work independently, and she says it has really cut down on distractions. "They're such different learners. Listening to music actually helps them focus," she claims (Interview 3/24/10). She says it also functions as something that can be taken away if students are not doing the right thing. Music is a treat that they like to have and threatening the loss of it helps get them to stay on task without much cajoling.

One last management strategy that Maggie finds to be successful is the angling of computer screens. At the beginning of each day, she tilts each computer screen, almost imperceptibly, toward her desk. It's not enough to cause the students to sit down and adjust it back, but it is enough for her to see the edge of each one. This trick enables her to supervise the students' computer usage discreetly. Along the same lines, she is excited about a new piece of computer software that ACS has purchased that will enable the facilitator to monitor a classroom of computers from a central display. Maggie says the software allows the facilitator to send instant messages to students individually who might be stuck on a particular problem or need to be reminded about their conduct. Maggie suggests that software like this is ideal for teaching in a computer

lab, but there are cheaper tricks that work too like the screen tilting strategy mentioned above, or hanging large, curved mirrors that reflect the computer screens (like the mirrors used near tunnels and sharp turns to show if anyone is coming from the other direction.) Whichever strategy is chosen, Maggie believes that being consistently present and aware of student's computer activities is the key to strong classroom management in a computer lab.

Challenges

Maggie experienced the same challenges with saving work that both Susan and Ava faced. She also ran into issues with time, and she had to add an extra week to the project. It wound up taking nearly four weeks to finish the math movies, rather than the two she had planned for. Putting both issues of saving work and having enough time aside, the biggest issue Maggie dealt with was managing the voiceover recordings. She had all of her students record their voiceovers on a single data file, which she then struggled later to separate for use on the digital movies. She sought help from the IT department and was able to separate the files.

Cross-Case Analysis

Prior Knowledge and Experience

Since all three teachers were accustomed to teaching for ACS and using the computer labs as a classroom space, their high level of computer experience was certainly a factor in this project as well as a limitation to the generalizability of the findings. All three teachers exhibited a great deal of computer savvy in part because they were at the end of a school year where 1) they were used to teaching their classes in computer labs as often as they taught them in classrooms, 2) they used an online curriculum to deliver instruction, and 3) they were acclimated to supplementing the online curriculum with technology-based projects. Looking beyond these three factors, the teachers' individual perceptions of themselves as computer users played a role.

Ava did not view herself as a very strong computer user. She had a lot of life experience with digital devices, but she seemed to view those experiences as commonplace as running a microwave; her computer usage was just what people used at the time. She didn't feel that she possessed any special technological skills. This perspective showed when she ran into trouble with the software. Other than seeking out help from students, colleagues, and IT support, she was at a loss on how to handle unexpected issues. She became frantic and aggravated.

Susan and Maggie, on the other hand, both approached the project from the perspective that new technology is not a big deal. Both were

hands-on learners who said that in order to learn new computer programs, they just had to get in and play with the software. Both of them did small projects on their own over spring break so they would be more familiar with the process of digital storytelling and the logistics of PC Movie Maker. When issues arose, both were fairly calm and relaxed about them. Susan seemed a little more stressed about the issues than Maggie, but Susan was incredibly good at coming up with alternative solutions on the spot. She had her students save their work to her Moodle site (her educational management system). She also switched gears to have students view and comment on each others work by viewing them right there in the classroom.

The difference in Ava's reaction from Maggie and Susan's might also have to do with teaching experience. Maggie was in her seventh year as a teacher, and Susan was in her fifteenth. They both had laid-back, easy-going attitudes with their students, which they displayed throughout the entire digital storytelling project. Susan experienced some frustration with the issues, but she didn't let that frustration affect her experience of the project. When I asked her if she would go ahead with the digital storytelling project she scheduled to start with her juniors despite the complications she was experiencing with her sophomores, she said, "Yes, why should they be any less frustrated than these guys?" (Interview 4/9/10).

Classroom Management and Student Engagement

Overall, all three teachers demonstrated excellent classroom management techniques, quite possibly since teaching in the computer lab had characterized the entire school year for all three instructors. Their students were also well acquainted with being in the computer lab. The routine was clearly established and continually reinforced. Out of all three examples of classroom management, Ava had what appeared to be the most effective strategy. She had the students meet in a huddle for the first few minutes of class in order to give information and directions to the whole class simultaneously. Even though this particular strategy seemed to be the most effective, classroom management was not a problem for a single teacher in this project.

All three teachers reported that student engagement was positively impacted by the project. The students were excited to work on the project. When given the choice of activities to work on, the students almost always requested time for their digital stories. Ava was enthusiastic about a typically disruptive student's engagement:

> I have a learner in the fourth period class who doesn't like to do work ever, but I was like, 'Look you get to look at pictures and actually do things.' And he was like, 'Wow! And he was engaged the whole time! I didn't have to talk to him about anything disruptive. Usually he'll look at random pictures, draw, and have his head down; he was engaged the whole time. That was cool.

(Interview 3/31/10)

Ava also stated, “Although it was frustrating at points because pictures would erase or music would erase because of the school, I think they all really, really liked it” (Ending Interview 4/14/10). All three of the teachers used the project as a “dessert” for finishing the online textbook work. Maggie exclaimed “This is the most independently these kids have worked all year!” (Interview 5/14/10).

Challenges

The challenges related to this project have been reported throughout this chapter, but I would like to include a single list here that outlines all of the primary issues in one place:

1. **Issues with security settings on software**. Three specific challenges related to security settings were observed in this project: a) the route to access PC Movie Maker was concealed on the computer’s desktop, b) several features on PC Movie Maker were disabled, and c) the school’s network underwent a “scrubbing process” each night. First of all, the school’s administration and/or IT support had erased the desktop access to PC Movie Maker. When the teacher-participants inquired about how to find Movie Maker, they were told that the school’s leadership did not want the students to be able to find it easily because they did not want the students to play around with it in the computer labs. In order to

access the software, the teachers had to be guided on how to dig through hard drive files. A second issue related directly to the disabling of several features on PC Movie Maker. Features such as the voice over recorder and various transitions were disabled. Finally, ACS's computers undergo a digital scrubbing process each night where all things downloaded on the computers are scrubbed off of the network. The school uses this process to remove any songs, clips, or images that students might have downloaded throughout the day. The scrubbing resulted in the loss of student's media in their stories. In a report entitled "Emerging Technologies for Learning," conducted by BECTA, formerly the British Educational Communications and Technology Agency, they state "As schools and learners vie for control of the learning process, a common result is for students to do most of their real learning outside the classroom, as schools limit access to many of the digital tools that students are accustomed to using their daily lives" (39).

2. **Lack of support from administration and IT department.** The teachers were expected to find new and different ways to incorporate technology in the classroom, but resources were practically non-existent. All three teacher-participants mentioned that the school only had two overhead projectors available. Maggie said that the Parent Teacher Organization was trying to allocate funds to the acquisition of more projectors (Interview 3/24/10). All

three shared that it was frustrating and difficult to model new digital tools such as PC Movie Maker without an overhead projector. In addition to the lack of projectors, the school's leadership locked down the resources that were available, worrying that the computer software would be a distraction rather than a learning resource. In her 2010 dissertation entitled *Exploring Student Practices, Teacher Perspectives, and Complex Learning with Web 2.0 Technologies*, Danielle Fahser-Herro claims, "Ironically, a look at the Internet's capacity for teaching and learning suggests current web tools potentially offer what educators profess to value instructionally, yet the technological gap between (teacher) instruction and student use widens" (34).

3. **Videos had to be edited and presented on the computers where they were originally created.** The teachers and students realized that the videos had to be opened on computers that had the images and audio saved on it. This made working on the projects at home nearly impossible. If a student did work on the project at home, s/he had to save and publish the work at home. The same was true of students who started the project on one computer in the lab and then tried to move to a different computer. Even though they saved their work to the school's server, the actual hard drive held the images and audio so they could not view their work from different computers. A possible solution to this issue

was found on Microsoft's website. On a troubleshooting forum for Windows Movie Maker, a customer states he/she cannot publish the movie due to missing source files (or images with red X's, as the students in this project experienced). The Windows support team responded that this will happen if one or more of the original source files were deleted or misplaced. The support technician said to "locate the source file" and to ensure that it was not deleted from a network server ("Troubleshoot problems").

4. **Issues recording and working with audio voiceovers.** There were four predominant issues related to voiceovers: a) having the time to record a suitable voiceover, b) having separate audio recording devices to use since the voiceover recorder on the software was disabled, c) finding a quiet space to record an audible voiceover, and d) splitting the audio files once students were able to record a voiceover. Tom Banaszewski claims recording the voiceover is the most time intensive part of creating digital stories (81).

Suggestions

The teacher-participants were asked if they had any suggestions for the other teachers planning to do a digital storytelling project. They offered the following suggestions:

1. Jump in. Go for it and don't worry.

2. Develop all aspects of project completely before beginning.
3. Practice using the software by doing your own pilot project.
4. Complete the pilot on the same computers your students will be using to better anticipate glitches and challenges.
5. Give students plenty of space for trial and error.
6. Give them plenty of time for extensive planning and production.
7. Enlist support from colleagues, administration, and parents before starting project.
8. Set up a central file for the script, videos, pictures, music files, and anything else the student might want to use in the digital stories.
9. Save work constantly, and back it up in at least one other place.
10. Be sure to actually complete the step entitled, “Publish the Movie,” as this packages all of the material together.

Student Surveys

The students were asked to evaluate the project as a part of the data collection for this project. The vast majority of these student evaluations are specific to Maggie’s math project because she had her students complete the surveys during designated class time whereas Susan and Ava’s students were asked to respond to an online survey in their own time. Out of fifty-six surveys submitted, forty-seven, or 84% of

them come from Maggie's students. Susan's students posted six evaluations, or 11%. Ava's students posted three virtual surveys, or 5%.

The discrepancy in numbers of evaluations per teacher can be explained by the different ways the evaluations were assigned to the students. Maggie handed each student an evaluation with a student consent form attached. She gave them a few minutes to complete and submit the surveys to provided envelopes so their responses could be submitted anonymously. Every student she gave an evaluation, submitted one in the envelope. Susan and Ava both posted the survey questions on the Moodle website, where the students had just submitted their digital stories. All three teachers asked their students to complete an evaluation, but Maggie was the only one who encouraged the completion of the questions by making it an in-class activity. Since Susan and Ava didn't require the students to do the evaluations, a very small percentage of their students completed them. In a study that evaluated the response rates of online surveys versus traditional in-class surveys, the researchers stated, "The only serious problem posed by the online method is a potentially low response rate," and they suggested that teachers add some type of incentive, such as a grade value, to increase student response rates (Dommeyer, Baum, Hanna, and Chapman 620). As a result of the low response rates from Susan and Ava's students, my ability to generalize about the students' enjoyment of the project is predominately based on Maggie's comments and experiences with the project.

Table 4: Summary of Students' Responses to the Project:

Frequency of Response	**Type of Response**
#1—31 out of 56 (55.3%)	The project was fun and/or educational
#2—11 out of 56 (19.6%)	The project was both fun and challenging
#3—8 out of 56 (14.2%)	The project was not enjoyable
#4—6 out of 56 (10.7%)	Neutral—did not comment about it being enjoyable or difficult

For the most part, the students responded favorably to the projects assigned by all three teachers. Out of fifty-six total evaluations, thirty-one students wrote that they thought the project was fun and/or educational. One student wrote, "I thought it [the project] was awesome because it was something different than just writing" (Student Evaluation #51). Another student wrote, "I liked it [the project] because it was fun, easy, and we had a lot of time to do it" (Student Evaluation #48). One of Maggie's students responded, "I thought it [the project] was fun because we had all the options in the world of appropriate games. It was also fun because we learned how to use Movie Maker" (Student Evaluation #44).

Out of the fifty-six evaluations, eighteen students commented on the difficulty of the project. Eight of the eighteen students stated they did not enjoy the project at all. One student said, "I didn't like it [the project] because I'm not good with computers" (Student Evaluation #21). Another student noted, "I didn't like it much because it [Movie Maker] was glitchy"

(Student Evaluation #46). "I didn't really like it [the project] at all" (Student Evaluation #50). Two students mentioned liking it at first, but then they lost interest. One of those two students said, "At first, I thought it was pretty cool, but it got sort of boring more into it" (Student Evaluation #28). The other eleven students who commented on the difficulty of the project also mentioned enjoying it. One student said, "It was hard and fun when we were done" (Student Evaluation #13). Another student wrote, "I love this kind of stuff, so it was really fun to do. Some parts got hard, but nothing's completely easy" (Student Evaluation #30).

Students' Challenges

Table 5: Challenges Students Reported on Evaluations of the Project

Frequency of Response	**Challenge Reported**
#1—15 out of 56 (26.7%)	No problems at all
#2—13 out of 56 (23.2%)	Work was deleted (including entire projects, images, audio)
#3—7 out of 56 (12.5%)	Difficulty with Audio Recording
#4—4 out of 56 (7%) (3-way tie)	1. Timing voiceover/audio with images. 2. Using/finding images to communicate message 3. Saving work
#5—1 out of 56 (1.7%)	Difficulty using music

The most common response to the question about whether students had challenges was the student didn't experience any challenges at all. Over a quarter of the students had no issues.

The remaining three fourths of the students experienced a variety of challenges. The challenge the students reported most frequently was issues with work being deleted. Out of the fifty-six evaluations, thirteen had work deleted unexpectedly. Most often it was the pictures that were deleted from the story. The second most reported challenge was an issue recording and managing voiceovers. Seven of the fifty-six evaluations mentioned troubles with voiceovers ranging from being unable to use the audio recorder to not having enough time to get a quality recording. The third most reported challenge was evenly split between three different issues: twelve out of fifty-six students reported experiencing one of the following issues: 1) problems saving work, 2) trouble finding images, and 3) difficulty timing the images with the audio.

Students' Suggestions for Teachers

The students had several pieces of advice for teachers interested in trying a digital storytelling project. Eight of them simply said to go for it. One student stated, "Oh, it's fun to do, you can learn from it. You should really give it a try" (Student Evaluation #42). Only three students suggested that teachers not do it. The students' number one suggestion was to give your students extra support and guidance. One student

offered, “Just have patience and use materials that would be easy to use and encourage your students!” (Student Evaluation #30). Another said, “Give examples” (Student Evaluation #19). And a third student suggested, “Help your students more and spend extra time with them” (Student Evaluation #24). The second most common piece of advice was to give your students ample time. One student advised, “I would say give them about a month to do so they can really research” (Student Evaluation #37).

CHAPTER FIVE

CONCLUSION

The goal of this project was to discover what happened when a small group of non-trained teachers facilitated a digital storytelling project with their students for the first time. The teachers chosen were not specifically trained in the digital storytelling medium so that I might discover what obstacles the teachers faced and what strategies they invented and employed to overcome the emergent challenges.

Research Questions

This study began with the following questions: What happens when a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time?

- What obstacles arose during the facilitation of a digital storytelling project?
- If obstacles arose, what strategies did the teachers employ to get past them?
- Were the strategies successful and/or useful?

What happens when a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time?

The over-arching research question was purposely open-ended so I could identify some of the challenges a non-trained teacher might

encounter, as well as offer some strategies for success. Despite a body of literature on digital storytelling that has grown exponentially over the last ten years, there are few, if any, studies that look at teachers who have not been specifically trained in digital storytelling. The pioneer research projects to look at digital storytelling in the classroom have studied how teachers have implemented digital storytelling after attending a training workshop, which has certainly laid the framework for a project like this one. But, I believe focusing on non-trained teachers offers a valuable perspective because it provides a glimpse at how the average teacher might fare with a digital storytelling project. And with education and funding the way they are currently, teachers bravely embarking on digital storytelling projects with little, to no, specialty training seems to be a more likely scenario than teachers who have had the opportunity to attend a three-to-five day, intensive workshop.

In response to the question, “What happens,” all three teacher-participants in this project felt that it was a success despite the challenges they encountered. In order to determine whether the project actually was a success, it is important to know how success is measured at ACS. ACS defines success in learning as the attainment of the core standards outlined by the state Board of Education, but they also subscribe to a more individualized form of assessment. They test all students at the beginning of the year in order to gain a starting benchmark for each individual student. The students are then tested again at the end of the

year to see “how far each student advances during the school year” (ACS Homepage). The corporate goal for all of the ACS schools across the country is that each student achieves more than a year’s typical learning gain. On their webpage, ACS claims, “Students at 69 of 71 [ACS] campuses achieved average learning gains greater than one grade in the 2009-10 school year.” They go on to explain, however, “While we endorse the national push to improve math and reading test scores, [ACS] continues to emphasize educational balance. We integrate instruction in history, science, literature, critical thinking, writing, foreign languages, music, art, technology, and athletics” (ACS Homepage). While creating digital stories, the students were integrating aspects of literature, history, critical thinking, writing, music, art, and/or technology into the completion of the project.

The digital storytelling project addressed the Department of Education’s standards as well. Under the educational technology standards for “Effective Communication and Digital Interactions,” the Department of Education requires that students “Communicate information and ideas respectfully and effectively to multiple audiences using a variety of digital environments” (Strand 2, Concept 1, PO2). Additionally, the expectation that students are creating original works on digital media is clearly stated under the “Creativity and Innovation” Concept. Students should “Create innovative products or projects using digital tools to express original ideas” (Strand 1, Concept 4, PO1). Under the English

Language Arts competencies, the Department of Education mandates that students, “Plan, organize, develop, produce and evaluate an effective multimedia presentation, using tools such as charts, photographs, maps, tables, posters, transparencies, slides and electronic media” (ELA Standards, Viewing and Presenting, Proficiency 2). The English Language Arts standards also require writing in different genres, narrative structure being one of those specified. All of the above-mentioned objectives were integral in the completion of a digital story.

All three teachers shared they felt it was a worthwhile project. Susan stated, “This has been a great project! I am enjoying the student’s excitement and engagement with completing the movie and doing the digital design” (Written Reflection). Maggie claimed, “Many of the students here are visual learners…so this project is tapping into one of their strengths. This makes the students very interested in the project” (Written Reflection). Ava said, “Although it was frustrating at points because pictures would erase or music would erase because of the [school‘s security], I think they all really, really liked it” (Interview 4/14/10).

Some scholars suggest that it is the challenges that make the work both compelling and rewarding. Nikos Theodosakis claims, “The process of creating and the satisfaction of completing any project, not only a filmmaking project, helps build creativity, confidence, and self-esteem” (37). Similarly, James Gee posits, “It brought back home to me, forcefully, that learning is or should be both frustrating and life enhancing. The key

is finding ways to make hard things life enhancing so that people keep going and don't fall back on learning and thinking only what is simple and easy" ("What Video Games" 6). Without the struggle, the success of achievement might not be as sweet.

Final Projects

The types of projects chosen by the three teacher-participants in this study were driven by their existing plans for their curriculum. Susan coupled the digital story with the Utopian/Dystopian literature she was already planning to cover with her class. Ava did the same by asking her students to commemorate Holocaust victims after reading World War II literature. Maggie, the only math teacher in the study, asked her students to find four different ways math was incorporated into their chosen sport or activity. Tom Banaszewski states, "Three general profiles exist of approaches to digital storytelling: the first who focus on personal narrative, the second who target content-area integration, and the third who view digital storytelling as filmmaking" (64).

Of the different assignments found in this study, the Utopias, math projects, and Holocaust stories were all content-driven. While the stories did capture their intended theme (Holocaust, Utopia, or Game), they somehow fell short of the deeply meaningful experience claimed in the literature. Banaszewski draws on Bernajean Porter's theories when he says, "I believe there is merit in digital storytelling approaches that

produce stories that ‘express an understanding and application of concepts learned from a unit of study’ (Porter 2004), …but ones that do not answer the essential question of ‘What does this topic mean to you?’ do little to develop students’ story literacy” (2).

Lack of personal significance was the main shortcoming of the stories developed during this project. The Utopia/Dystopia stories were really creative and they showcased both the values and interests of the students who conceived of them, but they lacked a clearly articulated significance to the student. The same was true of the Holocaust stories. The stories were based on true victims and even though the survivors’ tales were heartbreaking, very few students were able record an audio soundtrack to put in their piece, and the absence left the stories feeling more like a slideshow. The math stories illustrated a little more personal importance, but only because many of the students had voiceovers. There were no voiceovers in either the Holocaust or the Utopia stories due to technical difficulties. Until we saw the impact on the stories, it was easy to underestimate the value of the story maker’s voice. Lambert says, “Truly our voice is a great gift. Those of us fortunate enough to be able to talk out loud should love our voices, because they tell everyone so much about who we are, both how strong we can be and how fragile” (54). Both the Holocaust and Utopia stories would have been more powerful with the significance articulated in the students’ voices. However, it was a logical choice for the teachers to exclude the voiceovers when time constraints

and technical difficulties presented themselves because the teachers were not adequately versed in the value of exploring personal significance in the digital stories.

The discrepancy can be traced back to the in-service training I conducted with the participant teachers at the very beginning of the project. As I sifted through the in-service transcripts, I realized I did not stress the importance of answering the question, “What does this topic mean to me?” therefore, the teachers did not urge the students to address the question either. The under-emphasis of this important element was inadvertent, but it definitely impacted the final stories. I suspect this type of information breakdown happens frequently in trainings where a delegate is sent to learn a new educational technology and then charged with teaching his or her colleagues how to use it. The breakdown of information is reminiscent of what happens when a group of people plays the “telephone” game; the message is shared to the best of the participants’ abilities, but it is rarely transmitted flawlessly.

Assessment

During my in-service training with the teachers, I instructed them in what the Center for Digital Storytelling calls the “seven elements,” which are seven important things to consider while making a digital story:

1. Point (of View)—The point you are trying to make with your story.

2. Dramatic Question—The underlying framework of a type of story genre.
3. Emotional Content—There must be some type of emotional shift.
4. The Gift of your Voice—Voiceovers lend to the intimacy or connection.
5. The Power of Soundtrack—The impact of music on visual imagery.
6. Economy—Less is more
7. Pacing--Using variable rates to deliver audio and to pace imagery. (Lambert 45-49)

A rubric for assessment could use the seven elements as assessment categories, adding any other areas that are relevant to the specific class/teacher's assignment expectations.

One assessment consideration that would be worthwhile in any digital storytelling project is use of intellectual property. Almost all of the students used images and songs without permission in their stories. All three of the teacher-participants touched briefly on the responsibility of using intellectual property appropriately, discussing copyright laws and citing sources, but none of the teachers' assessments evaluated the correct usage. The Utopias and game stories were underscored with copyrighted songs, as were some of the Holocaust stories. All of the stories included images that were copied and pasted from various online sources without permission or acknowledgement. Additionally, many of

the Holocaust stories had graphically alarming images that were readily available on the Internet, but were excessively sanguine and did not contribute to the telling of the stories. The students did not understand how to communicate the atrocities involved with the stories they were trying to tell without the usage of gratuitously graphic imagery. A conversation about intellectual property and appropriate usage needs to be a component of any multimedia project, especially in the educational setting.

"Assessment of digital storytelling can be viewed from three perspectives: 1) demonstration of writing, research, and technical skills 2) demonstration of story, visual, media and technical literacies (digital literacy) and 3) personal development. The first perspective, which emphasizes state standards and tool literacy, is most common to classroom uses of digital storytelling" (Banaszewski 82). The emphasis on tool literacy and state standards was certainly at the heart of all three projects in this study; there was little discussion of whether the stories demonstrated gains in literacy or personal development for the students. I believe all three participants felt that their students gained literacy skills and developed personally through the project, but these aspects of the learning were not formally assessed.

For all three teacher-participants, the assessment of the digital stories was the most challenging aspect because for one, they did not fully know what to grade. From the outset of the project, Maggie set her goal

to have each student finish and submit a digital story. She was less concerned about the final product and more focused on her students' engagement with the activity. Banaszewski's research supports Maggie's approach to the project: "My emphasis is on the teacher having realistic expectations when she creates and conveys her assessment standards for the students" (90). Banaszewski also states, "Assiging a grade to a digital story should be considered a low priority when implementing a digital storytelling project for the first time" (108).

Ava and Susan set their expectations based on the same type of assessment they would normally use with a non-technology-based assignment. Basically they were looking for an informal essay to be presented through a multimedia genre. Troy Hicks, author of *The Digital Writing Workshop*, comments on using traditional measurements to assess learning with new technology. He uses Sara Kadjer's question, "Does doing something old with new technology mean that I'm teaching with technology?" to address this issue. Hicks answers Kadjer's question by saying, "Her [Kadjer's] answer, as well as mine, would be no. When we simply bring a traditional mind-set to literacy practices, and not a mind-set that understands new literacies…we cannot make substantive changes to our teaching…" (2). With new types of technology, targeting new types of literacy, educators must incorporate revised rubrics for assessment.

There are several examples of assessment rubrics found in the appendices of this dissertation. Theodosakis offers two assessment rubrics in his text, *The Director in the Classroom: How Filmmaking inspires Learning*, both of which could be readily adapted for a digital storytelling project. The first he calls the "Basic Film Assessment" (Appendix M).

The second rubric covers all aspects of production from "Development and Pre-production" through "Production," ending with "Post Production" (Appendix N). Troy Hicks offers an assessment rubric for digital stories in his text, *The Digital Writing Workshop*. He includes a rubric based on the Six-Traits model, and he includes specific parameters regarding the assessment of digital stories, as well as blogs, wikis, photo-essays, and podcasts; however, since this dissertation is specific to digital storytelling, I only include the digital storytelling guidelines in the reprint found in Appendix L.

One aspect of Hicks' rubric sets it apart from Theodosakis', at least from the perspective of assessing work produced for an English class. Hicks' use of the Six-Traits model encourages the evaluation of grammatical structure. In the majority of projects produced during this study, grammar errors were rampant in the digital stories. As English teachers, Susan and Ava would normally include grammatical usage in the assessment. Both teachers shared they would ordinarily have students engage in peer review and draft revisions, but since they did not

anticipate this issue, they did not have a model for editing and revision in mind before the students submitted the final stories. Using the Six-Traits as one part of the assessment, teachers would have the opportunity to require the same skills they would typically expect in their students' work.

Beyond not knowing exactly what to grade, the teachers also experienced difficulty trying to view the students' final projects. Many students had trouble submitting their work while maintaining the format and structure of the digital stories. If a student tried to view his or her project from a computer other than the one where the story was created, the images would show up as white boxes with red X's in the center. This issue stemmed from several challenges that will be discussed in more detail in the following section. The teacher-participants had to adjust quickly and find alternative ways for the students to submit their work. One strategy was to have students post their work on Youtube.com. Many students were eager to do this anyway so they could share their work with friends and family. A second solution was to have students upload their work to a learning management system such as Blackboard, eCollege, or Moodle. Susan ran a Moodle site, which is available through Open Source software for free use, and she set up a place for both hers and Ava's students to post their digital stories. The benefit of using the Moodle site for submission was that students were able to view and comment on each other's work, which Susan felt was a valuable component of the assessment process. A third strategy was to encourage

students who had the technological capabilities to complete the work and submit the work on a CD. This was a viable option for many students; however, they were unable to do any of the work at school during the time allotted which led to the teachers finding alternative things for those students to do in class.

There were also challenges with the software, but they seemed to mostly be specific to ACS's particular IT configurations and security settings. Ava said this about her experience: "A lot of the obstacles were mainly because of the school and… firewalls that they had for their programs" (Interview 4/14/10). Not to say that all of the problems were due to the school's security settings, some were first time user errors, but the majority of the troubles in these three teachers' projects stemmed from the nightly scrubbing of data. It is important to note that all three teachers figured out ways to work around the challenges their students experienced. In fact in many cases, it was the students themselves who figured out the alternative solutions. Nikos Theodosakis states, "…As students set out to create their films, and discover obstacles of time, equipment and other resources, they learn to identify and solve their own problems, and to own the process for finding solutions" (32). All three teachers gave their students the space and authority to problem solve as needed, which led to the students coming up with new and different solutions.

An unexpected issue that arose in the Holocaust projects was the use of extraordinarily graphic imagery. Obviously, the content of these Holocaust stories was very emotional and just the nature of the topic means that the available imagery is going to be difficult to view. In conversations leading up to the project, I recommended that Ava try to find an alternative way to explore the Holocaust literature in a digital story, without asking her students to confront such graphic images and experiences. She was very excited to incorporate the life story cards she had received from the Holocaust museum, and she felt that she could guide her students through the projects as a way for them to have a heightened empathetic experience. However, the digital stories seemed to be gratuitously graphic. As a generation who has grown up with everything you can imagine from sex to autopsies readily available on the Internet, Ava's students' videos lacked a sense of propriety; in fact, it seemed the more horrific the image, the more frequently it was used across multiple students' stories. In every video I saw, the life stories of the Holocaust victims and survivors were second to the graphic images of the Holocaust. Nikos Theodosakis claims that the process of filmmaking requires on-the-spot analytical skills, deciding what images to use in order to communicate particular messages. "It is about looking at all the information and deciding what should be included and what should be left out. It is about 'filtering' information on your feet" (34). While the overwhelming amount of graphic imagery was unexpected in this project,

it is probably to be expected with first time filmmakers. They have not had the opportunity to hone their analytical skills with regard to visual imagery. They have not had the chance to see the impact of their choices. Lambert refers to this as “economy.” “Economy is generally the largest problem with telling a story. Most people do not realize that the story they have to tell can be effectively illustrated with a small number of images and video, and a relatively short text” (57). Most of the students working on the Holocaust stories bombarded the viewer with graphic imagery where economy of imagery might have been even more effective. But without prior experience, how could the students know that?

What obstacles arose during the facilitation of a digital storytelling project?

1. *Lack of support from administration and IT department.* The teachers were expected to find new and different ways to incorporate technology in the classroom, but resources were practically non-existent. Additionally, the school’s leadership and IT staff locked down the resources that were available, worrying that the computer software would be a distraction rather than a learning resource. This applied specifically to Windows Movie Maker. While it was present on all of the computers in the building, the path to get to the software had been concealed. Students had to access it from the hard drive’s directory, which required the teachers to find it and give their students specific instructions to get there.

In addition to burying the software, the school had several features of the program disabled so they could not be used at all.

2. *Videos had to be edited and presented on the computers where they were originally created.* The teachers and students realized that the videos had to be opened on computers that had the images and audio saved on it. As it was discussed earlier, the teachers found alternative methods for submission, using the Moodle website, having the students submit on discs, and/or saving all of their files on a flash drive rather than the school's server.

3. *Issues recording and working with audio voiceovers.* There were four predominant issues related to voiceovers:

    a. Having the time to record a suitable voiceover,
    b. Having separate audio recording devices to use since the voiceover recorder on the software was disabled,
    c. Finding a quiet space to record an audible voiceover, and
    d. Splitting the audio files once students were able to record a voiceover.

If obstacles arose, what strategies did the teachers employ to get past them? And, were they successful?

The first three issues listed above (security settings, administration/IT support, and presence of raw footage) can be discussed together. For all three participants, they had to be in constant conversation with their school's leadership and computer experts in order to get access to certain websites and software. All three suggested establishing a good working relationship before starting the project; they said to seek out the support and permission from administration and IT staff during the planning stages of the project in order to have a support structure in place. The teacher-participants also found that having students save their work (images, audio, projects, etc) on their own personal USB drives rather than the school's server helped alleviate some of the issues with data scrubbing.

Regardless of whether the students saved the projects on their own memory device or if they saved them on the server, one thing became evident: all raw footage must be saved alongside the project in order for the computer to display the images and play the audio tracks. The Center for Digital Storytelling suggests creating a folder and sub-folders on the hard drive. They suggest using the student's name or project title to name the main folder. Within that folder, they encourage the creation of sub-folders for rough images, ready images, soundtrack, voiceover, projects, and video ("Digital Storytelling Cookbook" 31).

With regard to the issues with audio and voiceover recordings, all three teachers were flexible with the final product. All three recognized that more time would have been beneficial for their students, but more time was not an option as the projects were scheduled toward the end of the school year. They encouraged their students to do as much as they could in the time available. Most of the students' final projects did not include the audio portions. This element was certainly missed, but as Banaszewski suggests, teachers should have "realistic expectations" (90) and make the assignment of a grade a "low priority" (108). Banaszewski cautions:

> When assessing digital stories, subjective grading occurs when teachers do not teach the actual skills and concepts they include in their rubric. Adding to this issue is the extensive time teachers invest in a multimedia project. When the end project does not meet teachers' expectations and appears to be a huge waste of class time, teachers are reluctant to access the effectiveness of their teaching. (83)

Since all three teachers were new to using digital stories in the classroom, it was advisable and appropriate for them to be flexible with the assessment of the students' projects; nonetheless, it is challenging to invest so much classroom time in an activity and not be able to clearly show administration and parents what the students learned. In a standardized test-driven climate, teachers are expected to make direct

correlations between activities and their effectiveness toward performance, which often leads to assessing grades for the sake of assessing grades rather than for assessing learning or efficacy of instruction.

A project like this rarely goes flawlessly the first time. Banaszewski shares some of the issues he encountered the first time he led a project with his students. His rubric did not truly address the skills he was teaching his students. Additionally, only "two of the twenty student digital stories effectively communicated the significance..." (89). He admits that he was disappointed that only two students were able to clearly share the significance of their experience, but he notes that reflecting on ones teaching practices are necessary to improve quality of instruction. He says, "Teaching story is not like teaching punctuation. It requires practice and a variety of approaches…I view digital storytelling as a tool for teaching story. I do not expect all students to have strong story, visual and media literacy skills before or by the end of a project" (90). Through reflection, teachers might come up with alternative strategies and measurements for guiding students through a digital story, but they shouldn't expect all of their students to be the next Martin Scorsese. Banaszewski suggests a pre-assessment of the students' visual and media skills might yield a better sense of growth rather than expecting all students to produce the same caliber product. Similarly, reflection is a post-assessment of teaching effectiveness, and it might yield a better

sense of the things a teacher did really well, as well as the areas where improvements could be made.

The nature of doing digital stories in the classroom requires undetermined exposure to the unknown, and I suspect that, in a nutshell, is one of the biggest obstacles for teachers. From using software and programs that are unfamiliar, to not knowing exactly what is going to happen, how long it might take, or how to demonstrate the learning that you feel certain is happening, digital storytelling involves risk taking. Risk taking is scary, but that is where the rich opportunities lie. Helen Keller is credited for saying, "Security is mostly a superstition. Life is either a daring adventure or nothing." In order to continuously meet students' needs, we must take risks and find new ways of doing things.

One suggestion that was echoed by all three teachers was the value of completing a pilot project. Banaszewski states, "The single most important step a teacher can take in planning a digital storytelling project is to complete a digital story herself" (61). This caveat was shared with the teachers, and all three participants played around with the software before introducing their students to Windows Movie Maker. However, I have not found the advice to do the pilot project on the actual computers the students will be using anywhere in the literature. None of the teachers in this study did their practice project on the computers the students were going to be using. From nightly data scrubbing, to concealed and disabled aspects of Movie Maker, doing a practice project

in the computer lab at school would have helped all three participants anticipate the issues they were going to encounter. Therefore, one valuable suggestion to come out of this study is the express encouragement to practice with the actual hardware the students will be using in order to minimize some of the challenges.

A successful strategy the teachers used extensively was peer mentors. All three teachers were able to identify which of their students was the most technology savvy, and they encouraged their knowledge and assistance throughout the project. Ava stated:

> I wasn't very knowledgeable on Movie Maker, but my saving grace was I had two students that really were knowledgeable on it. And, they helped me figure out different ways to save it, different ways to save pictures, different ways to save music, and that really, really helped. (Interview 4/14/10)

Susan also commented on the use of peer mentors specifically. She had two students who served as mentors during her 2nd hour class. Both had a lot of experience with Movie Maker so she gave them the responsibility to help other students. She mentioned that she finds students respond more when their peers value a certain thing. So in the case of Movie Maker, if these students were interested to know how to work it, then their peers would be more interested too (Interview 3/26/10). Maggie had similar feedback. In one of her weekly reflections she said, "They [the students] are exploring it [Movie Maker] on their own and truly helping

each other. I haven't had to help much as they are peer-teaching more than anything else" (Written Reflection).

Acknowledging that many of your students bring with them a great deal of experience and expertise with digital media is an opportunity to honor their out of school literacy practices. It might even encourage a student who is not normally a star student to shine academically. And like Susan said above, when students see their peers are interested in and knowledgeable about something, it often leads them to take more interest in it as well. With digital storytelling, drawing on those students who can act as peer mentors might help bridge the teacher's inexperience with the digital media as well as encourage students to take more interest in the project.

Future Scholarship on Digital Storytelling

As digital storytelling is a relatively new field of study with a limited body of research, there are many opportunities for future scholarship. More research is needed on digital storytelling as an educational resource. Researchers could investigate the educational value of digital storytelling from a variety of perspectives. Among these perspectives, direct impact on literacy is one area that needs more inquiry. Another key consideration is how digital storytelling can be used to target specific state standards, such as story writing skills, presentation skills, and technology skills. A look at how digital storytelling can be used to teach content-

specific material would also be a contribution to the literature. The previous three suggestions focus on digital storytelling from the educators' perspective. There is also substantial research needed on the students' experience. In this dissertation, the students were asked for their input, but entire studies could be conducted to investigate how students feel before, during, and after taking part in a digital storytelling project, addressing ease of software, value of learning, and future ideas for application among other things.

Much of the scholarship on digital storytelling cautions that without focusing first and foremost on story structure, students wind up with a multimedia slideshow rather than a digital story. A possible focus for future research is to study whether this concern is one of artistry or educational value. It seems that many of the early scholars are trying to differentiate digital storytelling as an art form rather than to say that multimedia projects are not educationally valuable. Ohler, Banaszewski, and Dogan all comment specifically that without primary focus on story narratives, students will most likely produce something more along the lines of a slideshow. This certainly was the case in this particular project; however, the educational value was still observable. As I pondered Ohler, Banaszewski, and Dogan's concern throughout this project, I was left wondering, what is wrong with multimedia slideshows? They might not conform to the genre of digital storytelling perfectly, but they were still an enjoyable and engaging way to illustrate learning in regard to the content,

competencies, and technology. Going back to the Department of Education's standards, multimedia presentations are a desirable focus for learning (ELA competencies, Viewing and Presenting, Proficiency 2). Without the clear emphasis on story writing, the narrative element might be lost, but using technology to present and share ideas is growing value in learning. Future scholarship might be able to comment on the value of digital storytelling even if it is not a perfect example of the art form.

Summary

Overall, this project was successful and educationally valuable. The teachers responded favorably to the experience, as did the majority of their students. As a classroom tool, it gave the students a new way to illustrate learning. They were able to apply content knowledge and demonstrate their understanding of technology. The teachers and students alike felt that teachers should try this type of project in their own classes. While there is much that still needs to be studied about using digital storytelling in the classroom, it is easy to see what a terrific resource it can be. There are multiple state standards that can be addressed by creating a digital story. From creating new media, honing visual communication skills, and practicing new forms of technology, digital storytelling offers many excellent opportunities for learning. But, any teacher will tell you that learning is not just about meeting standards. Educators strive to get students excited about learning, and digital

storytelling seems to ignite something in participants. It can be complicated and frustrating, but sharing something you have created is worth every moment.

Works Cited

"ACS Corporate Website." *Imagine Schools Arizona*. Web. 28 Mar. 2011. <http://www.surpriseprep.com/>.

Anderson, Rebecca and Bruce Speck. *Using Technology in K-8 Classrooms.* Columbus, OH: Merrill Prentice Hall, 2001. Print.

Banaszewski, Thomas. *Digital Storytelling: Supporting Digital Literacy in Grades 4-12.* Unpublished masters thesis, Georgia Institute of Technology, Atlanta, GA, 2005. Print.

Banks, Ivan, Ruth Searcy and Mike Omoregie. "Changing Ages: Techno-Literacy." *Education Resources Information Center*. 25 July 1997.

Barrett, Helen. "Digital Storytelling." *Dr. Helen Barrett's Electronic Portfolios*. Web. 31 Mar. 2011.

"BBC - Wales - Arts - Capture Wales." *BBC - Homepage*. Web. 31 Mar. 2011.

Bogden, Robert, and Sari Knopp Biklen. *Qualitative Research for Education: An Introduction to Theories and Methods.* Boston: Pearson Education Group, 2003. Print.

Butler, Janice Wilson. "Teachers' Attitudes toward Computers after Receiving Training in Low-Threshold Digital Storytelling A Applications." Diss. University of Houston, 2007. Print.

"City of Surprise Demographic and Permit Statistics." *SurpriseAZ.gov*. City of Surprise. Web. 14 Sept. 2010.

Clanchy, Michael T. *From Memory to Written Record: England 1066-1307, 2nd Edition*. Oxford, U.K. and Cambridge, MA: Blackwell, 1993.

Collins, Rives and Pamela Cooper. *The Power of Story: Teaching through Storytelling.* Long Grove, IL: Waveland Press, Inc., 1997. Print.

Daly, James. "Life on the Screen: Visual Literacy in Education | Edutopia." *K-12 Education & Learning Innovations with Proven Strategies That Work | Edutopia*. Web. 07 Aug. 2011.

DeForest, Tim. *Storytelling in the Pulps, Comics, and Radio: How Technology Changed Popular Fiction in America*. Jefferson, NC: McFarland, 2004. Print.

"Digital Storytelling." *Dr. Helen Barrett's Electronic Portfolios*. Web. 28 Mar. 2011. <http://electronicportfolios.org/digistory/>.

Dogan, Bulent. "Implementation of Digital Storytelling in the Classroom by Teachers Trained in a Digital Storytelling Workshop. Diss. University of Houston, 2007. Print.

Dommeyer, Curt J., Paul Baum, Robert W. Hanna, and Kenneth S. Chapman. "Gathering Faculty Teaching Evaluations." *Assessment and Evaluation in Higher Education* 29.5 (2004). *Southwest Utah University*. Web. 20 Sept. 2011.

Educational Uses of Digital Storytelling. Web. 28 Mar. 2011.

Emerging Technologies for Learning. Rep. Vol. 3. Coventry, UK: Becta (British Educational Communications Technology Agency), 2008. Print.

Fahser-Herro, Danielle. "Exploring Student Practices, Teacher Perspectives, and Complex Learning with Web 2.0 Technologies: A Socio-Constructivist Approach." Diss. University of Wisconsin-Madison, 2010. Print.

Gakhar, Sonia. "The Influence of a Digital Storytelling Experience on Pre-Service Teacher Education Students' Attitudes and Intentions." M.S. Thesis Iowa State University, 2007. Print.

Gee, James P. "The Legacies of Literacy: From Plato to Freire through Harvey Graff." *Harvard Educational Review*, 58:2 (1988): 195-212. Print.

---. *What Video Games have to Teach us about Literacy and Learning*. New York: Palgrave Macmillan, 2003. Print.

---. *Why Video Games are Good for your Soul: Pleasure and Learning.* Melbourne, Victoria: Common Ground Publishing, 2005. Print.

---. *Good Video Games + Good Learning: Collected Essays on Video Games, Literacy,and Learning.* New York: P. Lang, 2007. Print.

Girod, Janette. “Finding Flow: Getting into the Zone at Work.” *Slideshare*. Web. 29 July 2011.

Glaser, Barney & Strauss, Anselm. *The Discovery of Grounded Theory*. Chicago: Aldine, 1967. Print.

“HCLC Homepage.” Horizonclc.org. Horizon Community Learning Center, 2010. Web. 8 Dec. 2010.

Jukes, Ian. "The Fluencies." *21st Century Fluency Project*. Web. 14 Aug. 2011.

---. *Understanding the Digital Generation*. Kelewna, BC, Canada: Corwin Publishing, 2010.

Kahn, Richard, and Douglas Kellner. “Reconstructing Technoliteracy: a Multiple Literacies Approach. *UCLA Graduate School of Education & Information Studies*. 2005. http://www.gseis.ucla.edu/faculty/kellner/essays/technoliteracy.pdf.

Lambert, Joe. *Digital Storytelling: Capturing Lives, Creating Community*. Berkeley, CA: Digital Diner Press, 2002. Print.

---. *Digital Storytelling Cookbook*. San Francisco, CA: Digital Diner Press, 2007. Print.

Lankshear, Colin and Michele Knobel. *New Literacies: Changing Knowledge and Classroom Learning.* Buckingham, PA: Open University Press, 2003. Print.

Lankshear, Colin and Ilana Snyder. *Teachers and Technoliteracy: Managing Literacy, Technology and Learning in Schools.* St. Leonards, N.S.W.: Allen & Unwin, 2000. Print.

Lauritzen, Carol and Michael Jaeger. *Integrating Learning Through Story: The Narrative Curriculum*. Albany, NY: Delmar Publishers, 1997.

Levin, Douglas, and Sousan Arafeh. *The Digital Disconnect: The Widening Gap Between Internet-Savvy Students and Their Schools*. Rep. Pew Internet & American Life Project, 2008. Web. 08 Aug. 2011.

Meadows, Daniel. "Digital Storytelling." *Photobus: Adventures of a Documentarist*. Web. 31 Mar. 2011.

Merriam, Sharan. *Qualitative Research and Case Study Applications in Education.* San Francisco: Jossey-Bass Publishers, 1998. Print.

Microsoft Windows Live. Microsoft. Web. 30 July 2010.

O'Brien, David. ""Struggling" Adolescents Engagement in Multimediating: Countering the Institutional Construction of Incompetence." *Reconceptualizing the Literacies in Adolescents' Lives.* Eds. Donna Alvermann et al. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, 2006: 29-46. Print.

Ohler, Jason. "The World of Digital Storytelling." *Educational Leadership* (2005/2006): 44+. Web.

Patton, Michael Quinn. *Qualitative Evaluation and Research Methods, 2nd Edition.* Newbury Park, CA: Sage Publications, 1990. Print.

Prensky, Marc. "Digital Natives, Digital Immigrants." *On the Horizon* 9.5 (2001): 1-6. Print.

---. "Digital Natives, Digital Immigrants, Part II: Do They Really *Think* Differently?" *On the Horizon* 9.6 (2001): 1-9. Print.

Robin, Bernard R, Cameron S. White, and Richard F. Abrahamson. "The Expansion of Digital Storytelling into Content Area Instruction." *Courses*. College of Education, University of Houston. Web. 31 Mar. 2011.

Schank, Roger C. *Tell Me a Story: A New Look at Real and Artificial \ Memory*. New York: Charles Scribner's Sons, 1990.

"State Profiles." *US Charter Schools Home*. National Alliance for Public Charter Schools. Web. 14 Sept. 2010.

Tapscott, Don. *Grown Up Digital: How the Net Generation is Changing Your World*. New York: McGraw Hill, 2009.

"The Evolution of Digital Storytelling:An Abbreviated History of Key Moments During the First Sixteen Years (1993-2006)." *Center for Digital Storytelling*. Web. 29 July 2011.

Theosodakis, Nikos. *The Director in the Classroom: How Filmmaking Inspires Learning*. San Diego, CA: Tech4Learning Publishing, 2001.

"Troubleshoot Problems with Publishing a Movie to Your Computer." *Microsoft Windows*. Web. 14 Sept. 2011.

Tyner, Kathleen. *Literacy in a Digital World.* Mahwah, NJ: Lawrence Erlbaum Associates, Publishers, 1998. Print.

Wolcott, Harry F. *Writing Up Qualitative Research*. Newbury Park, CA: SAGE Publications, 1990. Print.

---. *The Art of Fieldwork*. Walnut Creek, CA: Altamira Press, 1995. Print.

"Writing in the 21st Century." *National Council of Teachers of English – Homepage*. Web. 02 Aug. 2011.

APPENDIX A

TEACHER PREPARATION IN-SERVICE

I. Show Digital Storytelling Power Point—20 Minutes

a. Description of what Digital Storytelling is
b. Examples that show 3 different types of Digital Stories

II. Seven Elements—20 Minutes

c. **Point of View**-- defining the specific realization you, as an author, are trying to communicate within your story
d. **Dramatic Question**-- establish a central desire in the beginning in such a way that the satisfaction or denial of that desire must be resolved in order for the story to end
e. **Emotional Content**-- A story that deals directly with the fundamental emotional paradigms–of death and our sense of loss, of love and loneliness, of confidence and vulnerability, of acceptance and rejection–will stake a claim on our hearts. Beginning with content that addresses or couches itself in one or another of those contexts will improve the likelihood that you are going to hold an audience's attention.
f. **Voice**-- our voice is a great gift. Those of us fortunate enough to be able to talk out loud should love our voices, because they tell everyone so much about who we are, both how strong we can be and how fragile.
g. **Soundtrack**-- by listening to or imagining a specific slice of music, we are putting ourselves into our own movie, a movie that puts our life into a clearer perspective, or at least entertains us
h. **Economy**-- Storytelling with images means consciously economizing language in relationship to the narrative that is provided by the juxtaposition of images
i. **Pacing**-- Pacing is considered by many to be the true secret of successful storytelling. Changing pace, even in a short digital story, is very effective. Our narrative can have starts and stops, pauses, and quickly spurted phrases.

III. Hands On Workshop—2 Hours

a. Uploading and scanning pictures to the computer
b. Importing and rendering pictures in iMovie
c. Importing and rendering video clips in iMovie
d. Importing and rendering music files in iMovie
e. Drafting and recording voice over tracks
f. Organizing pictures, video clips, music files, and voice over tracks to create a short movie
g. Film festival—sharing stories with the group

IV. Discussion of Experience and Applications—20 Minutes

APPENDIX B

WEEKLY REFLECTION JOURNAL

Directions: Please respond to the following questions and email to Corrine Gordon at Corrine.Gordon@asu.edu each Friday during the project facilitation.

1. Please briefly describe what digital storytelling-related activities you or your students did throughout this past week.

2. Did you or your students run into any obstacles throughout this past week? (Obstacles might include issues with technology, user ability, classroom management, assessment, etc.)

3. If there were any challenges (refer to #2) this past week, what strategies, if any, were used to resolve the issues?

4. Were the strategies useful/successful?

5. Do you have any anecdotes or memorable experiences from the past week that you can share?

6. Please journal briefly about your overall experience this past week with facilitating a digital storytelling project with your students.

APPENDIX C

BEGINNING INTERVIEW QUESTIONS

School Setting, Curriculum, and Teacher's Experience with School

1) Please describe the nature of your school's setting and mission.
2) How do you as a teacher align and/or disagree with this particular setting and mission?
3) Please describe the type of curriculum taught in your school.
4) What are your perceptions of student learning related to the chosen curriculum?
5) Do you have any experiences teaching for this particular school or using the specified curriculum that you would like to share?

Administration/School's Expectation for Technology Usage

1) What is the stated expectation for use of technology in your school?
2) Are there any unstated, yet implied, expectations for using technology?
3) As a teacher, how do you align and/or disagree with the stated and implied expectations for technology use?
4) How do the technology resources available aid and/or prevent meeting stated and implied expectations?
5) Do you have any experiences regarding technology use as this school that you would like to share?

Comfort/Experience as a Computer User

1) Please describe your history and experience as a computer user.
2) How has your experience/comfort as a technology user matched up with the school's expectation for technology use?
3) How do you feel about engaging with unfamiliar computer applications?
4) How do you handle challenges/difficulties with the computer?
5) Are there any specific resources you plan to draw on for assistance?

Experience with Related Computer Software and Digital Media

1) What do you know about movie making on the computer?
2) What experience do you have with digital cameras and uploading images?
3) What experience do you have with scanning and editing images?
4) What experience do you have with digital music files?
5) What experience do you have with recording your voice on the computer?

Preparation for Project

1) How do you plan to prepare for the upcoming project with your student?

2) What resources do you plan to draw on before and during the project?
3) How do you feel about facilitating the project with your students?
4) Do you have any concerns about facilitating this project?
5) What do you hope happens as a result of this project?

APPENDIX D

ENDING INTERVIEW QUESTIONS

1) How did the project go for you?

2) How did the project go for your students?

3) What obstacles did you face during the facilitation of the project?

4) What strategies did you incorporate to resolve any of the obstacles?

5) Were the strategies useful and/or successful?

6) Were any of the strategies not useful and/or unsuccessful?

7) If you had the chance to do the project over again, what would you do differently?

8) What suggestions do you have for teachers who want to try a digital storytelling project with his or her students?

APPENDIX E

STUDENT SURVEY QUESTIONS

1) What did you think about doing the digital storytelling project?

1) How did the project go for your teacher?

2) What problems, if any, did you run into while making your digital story?

3) What did you or your teacher do to fix any problems that you ran into?

4) What suggestions do you have for teachers who want to try a digital storytelling project with his or her students?

APPENDIX F

INFORMATION LETTER-INTERVIEWS

February 17, 2010

Dear _____:

I am a graduate student under the direction of Professor James Blasingame in the Division of English Education at Arizona State University. I am conducting a research study to discover what happens when a small group of non-trained teachers facilitate a digital storytelling project with their students for the first time.

I am inviting your participation, which will involve leading some or all of your students in a digital storytelling project. The project will take approximately 4 weeks to complete. Your participation will include leading the project with your students after taking part in an in-service training where you will be shown the computer software and the process used for digital storytelling. Teacher-participants will be asked to take part in a pre- and post-interview as well as submit a weekly reflection about the experience. You have the right not to answer any question, and to stop the interviews at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty,

Through your participation in the study, you will gain exposure and experience with the medium of digital storytelling, which is an emerging classroom resource that draws on creative writing, story structures, presentation skills, and extensive engagement with technology. Your participation may also help give other teachers valuable insights in how to approach digital storytelling projects in their own classrooms. There are no foreseeable risks or discomforts to your participation.

All identities will be protected in this study. The name of the school where the study is conducted will be changed, as will the names of all teacher-participants. Your responses will be confidential. The results of this study may be used in reports, presentations, or publications but your name will not be used.

I would like to audiotape this interview. The interview will not be recorded without your permission. Please let me know if you do not want the interview to be taped; you also can change your mind after the interview starts, just let me know. Digital audio files will be saved on my password-protected personal computer. They will be kept for three years, at which point all files will be permanently deleted from my computer.

If you have any questions concerning the research study, please contact the research team at: Corrine.Gordon@asu.edu or James.Blasingame@asu.edu

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788. Please let me know if you wish to be part of the study.

APPENDIX G

STUDENT ASSENT FORM

February 17, 2010

I am doing a project to see what happens when teachers do a digital storytelling project with their students for the first time. I am asking for you to rate how your teachers do leading the storytelling project at the end. You will do this by filling out a survey at the end. This is completely optional, you have the right not to answer any question. If you choose not to take part in the project or you want to withdraw from the project, you can.

The only time you will write your name during this project is on this form otherwise it will not be used at all. I will not tell your teacher, your parents, or anyone else what you say on your written survey. It is anonymous. You won't even write your name on the survey so that you can feel free to say what you really want to say.

Signature:_____
Date:_____

Investigator's
Signature:_____

APPENDIX H

PARENTAL LETTER OF PERMISSION

Dear Parent:

I am a graduate student under the direction of Professor James Blasingame in the Department of English Education at Arizona State University. I am conducting a research study to find out what happens when teacher lead a digital storytelling project with their students without attending a digital storytelling training workshop.

I am inviting your child's participation, in which they will get to evaluate their teacher's presentation of digital storytelling in an anonymous survey at the end of the project. Your child's participation in this study is voluntary. If you choose not to have your child participate or to withdraw your child from the study at any time, there will be no penalty. Likewise, if your child chooses not to participate or to withdraw from the study at any time, there will be no penalty. Your child's teacher may require them to complete the digital storytelling project as part of his or her final grade, but they do not have to complete the optional survey rating their teacher's performance if they choose not to. The results of the research study may be published, but your child's name will not be used.

Although there may be no direct benefit to your child, the possible benefit of your child's participation is helping teachers effectively lead digital storytelling projects with their students. There are no foreseeable risks or discomforts to your child's participation.

Your child's name will not be used in any of the observations associated with this project. The researcher will be evaluating and observing the teacher's presentation of the material rather than how your child does with the digital storytelling project. Their evaluation of the teacher's presentation of materials is anonymous and will not be shown to their teacher. Responses will be anonymous. The results of this study may be used in reports, presentations, or publications but your child's name will not be known.

If you have any questions concerning the research study or your child's participation in this study, please call me at (602) 561-9026.

Sincerely,

Corrine Gordon

By signing below, you are giving consent for your child _____ (Child's name) to participate in the above study.

_____	_____	_____
Signature	Printed Name	Date

If you have any questions about you or your child's rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX I

SUSAN'S ASSIGNMENT GUIDELINES:

UTOPIAN NIGHTMARE PROJECT

Overview:

Students will design a utopian society, a perfect work. To do this students will need to understand the different systems within a society, select the systems they feel will best suit the utopia they have created, know the meaning of dystopian and utopian societies, and then justify those decisions. Each group will create a digital storyboard using Windows Moviemaker to answer essential questions. Along with the group's digital storyboard, EACH PERSON will write a paper comparing, contrasting, and describing differences and similarities between the group's utopia, *Fahrenheit 451, 1984*, and today's society.

Systems:

I. Government
   i. Democracy or Communist?
   ii. Socialist or Libertarian?
   iii. Republic? Anarchy? Monarch?
II. Economics
   i. Goods and Services?
   ii. Import and Export?
   iii. Currency?
   iv. Child Labor, Women in the Workforce, Work Day Length?
   v. Legal System, Rules and Consequences, Police, Military?
   vi. Propaganda
III. Population
   i. Artificial Life?
   ii. Artificial Intelligence?
   iii. Are you brining people into the society or building around existing populations/facilities?
IV. Morality
   i. Religious Beliefs?
   ii. Human Rights? Differences?
   iii. Methods of Population Control?
V. Power
   i. How do you provide electricity?
   ii. Is there Power?
VI. Media and Communications
   i. Monitored?
   ii. Telephone?
   iii. TV?

iv. Radio?

VII. Social
- i. Family Structure
- ii. Rites of Passage
- iii. Polygamy or Monogamy?
- iv. Birth (Natural, Surrogate, Scientific)
- v. Death (Burial, Cremation, Rejuvenation)
- vi. Theatre and the Arts

VIII. Ecology
- i. Tundra
- ii. Desert
- iii. Coniferous Forest
- iv. Deciduous Grass Lands
- v. Taiga
- vi. Marine

Digital Storyboard Requirements:

Each group must have answered all 16 essential questions. The storyboard must be seven to ten minutes long. Be creative and make it appealing.

Utopian Nightmare Paper Requirements:

Each paper will need to be five to seven-page paper comparing your Utopian Nightmare to *Fahrenheit 451, 1984*, and today's society. Also, include all eight systems and how they are the same and/or different from your book and today's utopia.

Essential Questions:

17. What type of ecology would be the best and why?
18. How would we define a utopian society?
19. Why do people continue to pursue the concept of utopian society?
20. What role does chaos play in the creative process?
21. Why would your utopia exercise creativity, why or why not?
22. How do we form and shape our identities?
23. What are the essential liberties?
24. Does your government restrict rights to utopians? Why or why not?
25. To what extent does power or the lack of power affect individuals?
26. Why does your utopia have beliefs and values?
27. How do values and beliefs change over time?
28. How does conflict lead to change?
29. How might it feel to live through a conflict that disrupts your way of life?
30. What types of people are essential to building your community?
31. Can literature serve as a vehicle for social change?

32. What importance will media have in your utopia?

APPENDIX J

AVA’S ASSIGNMENT GUIDELINES:

HOLOCAUST STORIES

Digital Storytelling—PC Movie Maker Description:

Use the information sheet provided in class for your specific person.
Illustration should be used as the method for arranging details.
A minimum of three minutes and a maximum of four.
You may use music in your video.
You may use quotes in your video.
DO INDEPENDENT RESEARCH ABOUT THE HOLOCAUST

Each student will be given the name and biography of a different person who was placed in a concentration camp. Some of the people survived, some did not. Your job is to tell your person's story. To do this, you MUST use information from his/her biography. You must do independent research on events leading up to World War II, different concentration camps, the history of different cities during World War II, important events in World Way II, and the aftermath of World War II.

Your video should give the audience a complete and coherent idea of World War II, while showing your individual's story. Make sure to include major themes from in class discussions.

Notes:

You are representing a person who went through the horrors of the Holocaust. Treat this project with respect and show the dignity present in your person's life.

Make sure that the focus is maintained and each point is accompanied by logical thought.
A works cited page is not needed for verbal quotes if the author is cited properly within the written text. A works cited is needed for citations that are quote, facts, statistics, etc.

Attention:

A completed video must be uploaded on linuxpresence on April 12, 2010, in order to receive a grade for the final copy.

A completed video must also be emailed to me by April 12, 2010 in order to receive a grade for the final copy.

APPENDIX K

MAGGIE'S ASSIGNMENT GUIDELINES:

MATHEMATICS OF GAMES PROJECT

General Guidelines for Project:

1. Choose a game (board game, card game, sports game, or video game)
2. Have game approved by me.
3. Research four types of math involved in chosen game
4. Locate or take pictures or video that represent the chosen game
5. Choose music that represents your chosen game
6. Write and record a script to discuss and describe the four types of math in your chosen game
7. Put all of your information into Microsoft MovieMaker to create your digital storyboard.

Project Description:

Each student has chosen a game from which they will identify at least four types of math that can be found in the game. The students will collect pictures or video of their chosen game and create examples of the types of math evident in their game.

Using this information, the students will use Microsoft Movie Maker to create a digital storyboard to explain the four different types of math in their game. The students will create a movie that is at least one minute long. This movie will contain pictures, transitions, videos, music, and a voice-over script, which will explain the math found in the game.

These short movies will be due Wednesday, May 12, 2010 for full credit. 10% will be taken off for each school day that the project is late until Wednesday, May 19th at which point the student would receive a failing grade.

Students will be given plenty of class time to work on their project. However, students can choose to come in before school (8:00-8:40 Monday through Friday) to work on their digital storyboard OR can work on the project at home as well.

If you have any questions, please contact me.

Deadlines:
4/12—Get game approved by me
4/19—Return signed slip showing parental acknowledgement
4/23—Identify four types of Math in your game

4/30—Locate/create pictures or videos
5/5—Write and record script
5/12—create digital storyboard in Microsoft Movie Maker

APPENDIX L

CENTER FOR DIGITAL STORYTELLING'S SEVEN ELEMENTS

Element	Description
1. Point (of View)	--The point you are trying to make with your story. --“Why this story, now, for this group of people?” (47).
2. Dramatic Question	--The underlying framework of a type of stories. The question asks, “Who did it? in a mystery, or whether the hero will make it in time in an action thriller? --“What we are really talking about with the dramatic question is a structural ‘setup,’ corresponding to a logical ‘payoff’” (51).
3. Emotional Content	--Material of the story must have an emotional shift, or an up and a down. --“How we get past the hard part, and still get what we desire, this is what we want to know” (53).
4. The Gift of Your Voice	--Including a voiceover, with our own voice, lends to the intimacy of digital storytelling. --“…We have a complex interaction between following a story and allowing associative memories the story conjures up to wash over us” (54).
5. The Power of the Soundtrack	--The affect that music has on how we view visual imagery. --“We have come to believe that people now walk

	around with soundtracks running in their heads. Those soundtracks set the mood of our day, change the way we perceive the visual information streaming into our eyes, and establish a rhythm for our step" (55).
6. Economy	--This refers to the old adage: Less is more. --"Economy is generally the largest problem with telling a story. Most people do not realize that the story they have to tell can be effectively illustrated with a small number of images and videos, and a relatively short text" (57).
7. Pacing	--Drawing on a variety of pacing techniques (such as speeding up, slowing down, pausing, stopping) in the telling of your story is very effective. --"Pacing is considered by many to be the true secret of successful storytelling" (59).

(Lambert 45-59).

APPENDIX M

NIKOS THEODOSAKIS' RUBRIC ONE: BASIC FILM ASSESSMENT

Rubric One: Basic Film Assessment			
	Developing (1)	Competent (2)	Exemplary (3)
Ideas and Information	1. Ideas are unclear 2. Ideas are incomplete 3. Information is unorganized	1. Ideas are clear 2. Ideas are complete 3. Information is organized	1. Ideas are expressed in a creative manner 2. Ideas are thoroughly explored 3. Information is organized and presented in a creative manner
Narration/ Performance	1. Narrator rushes through or drags behind on screen images 2. Narration is dry, without emotion or change in inflection	1. Narration has a good pace to match visuals 2. Emotion and inflection appropriate to on-screen images	1. Good pace and innovative use of narration 2. Narration uses a variety of inflection pace, and emotion
Camera	1. Image is usually out of focus 2. Image is usually unsteady	1. Image is usually in focus 2. Image is usually steady	1. Image is always in focus 2. Image is always steady 3. Innovative use of camera
Sound	1. Sound in unclear 2. Voices can not be heard 3. Music is too loud	1. Sound is clear 2. Voices can be heard 3. Music is not too loud	1. Innovative use of voice, sound effects or music
Goals	1. Did not accomplish the goals and objectives outlined for this project	1. Accomplished most of the goals and objectives outlined for this project	1. Accomplished all of the goals and objectives outlined for this project
Subtotal			/15

APPENDIX N

NIKOS THEODOSAKIS' RUBRIC TWO

RUBRICS FOR DEVELOPMENT THROUGH POST-PRODUCTION

Rubric Two: Development and Pre-Production			
	Developing (1)	Competent (2)	Exemplary (3)
Script	1. Relies entirely on dialogue and narration to tell story 2. One person wrote the script, without input from the rest of the group 3. Does not explore the defined subject	1. Combines dialogue, narration, and the use of images 2. Some collaboration 3. Explores the defined subject	1. Rich in images and sparse on expository narration and dialogue 2. Created in collaboration with all members of the group 3. Explores the defined subject with creative perspectives
Pitching	1. No preparation put into presentation 2. Inaudible 3. Unsure of story	1. Well-prepared 2. Good oral presentation skills 3. Demonstrates an understanding of the story to be filmed	1. Very prepared, story memorized and delivered without a script 2. Excellent use of voice, pacing and emotion to pitch story 3. Thorough under-standing of story 4. Use of audio visual aids
Storyboard	1. No storyboard was created 2. No audio notations 3. No scene descriptions	1. Storyboard was created 2. The use of audio was sometimes indicated 3. Scene descriptions were included	1. Storyboard clearly described each shot 2. Audio ideas indicated and well-thought out 3. Innovative use of camera angles, lens choices and movement 4. Scene descriptions were articulate

Planning	1. No cast/crew list 2. No scene breakdown 3. No schedule 4. No ideas for l locations 5. No equipment list	1. Cast/crew list partially completed 2. Some scenes have breakdowns 3. Some scheduling was considered 4. Some locations were considered 5. Some equipment considerations	1. Cast/crew list completed 2. Detailed scene break-down 3. Detailed schedule 4. Detailed location plan 5. Detailed equipment list
Teamwork	1. One person did most of all of the work	1. The group members participated in their respective roles	1. Members contributed towards the project's success in their roles and helped with other roles' objectives outlined for the project
Subtotal			/15

Rubric Two (continued): Production			
	Developing (1)	Competent (2)	Exemplary (3)
Equipment	1. Did not arrange for equipment 2. Did not handle equipment safely	1. Arranged for most of the required equipment 2. Handled equipment safely	1. Arranged for all of the equipment 2. Handled equipment safely
Location	1. Did not use any locations, was all shot in a classroom 2. Did not phone ahead	1. Utilized a location 2. Phoned ahead, arranged for access	1. Creative use of locations 2. Phoned ahead, arranged access and sent thank you cards to location contacts
Organization	1. Not well organized 2. Unable to record 3. Lack of planning documents (Shot lists, scripts or storyboards)	1. Organized 2. Recorded scenes 3. Brought one planning document with them to set (Shot lists, script or storyboards)	1. Well organized 2. Filming objectives revealed 3. Brought more than one planning document with them to set (Shot lists, script, storyboards)
Camera	1. Unable to operate camera 2. Used only one type of shot 3. Camera did not move (No dolly, crane or handheld)	1. Able to operate camera 2. Used more than two types of shots 3. One kind of camera movement was used	1. Demonstrated camera proficiency 2. Used a variety of camera angles 3. Explored a variety of camera movements
Lighting	1. Unable to see image	1. Able to see image clearly	1. Innovative use of lighting

Audio	1. Unable to record sound 2. No audio on tape	1. Able to record sound 2. Audio was usually clear	1. Demonstrated good audio recording skills 2. Audio was always clear
Teamwork	1. One person did most or all of the work	1. The group members participated in their respective roles	1. Members contributed to the project's success in their own roles and helped with other roles
Subtotal			/21

Rubric Two (continued): Post-Production			
	Developing (1)	Competent (2)	Exemplary (3)
Editing--Orgnization	1. No paper edit prepared 2. Did not arrange for time at editing station 3. Could not locate source tape	1. List of shots prepared 2. Booked time on editing station 3. Able to locate source tapes	1. Proper edit decision list prepared including In and Out points 2. Booked time on editing station 3. Able to located source tapes
Editing—Video	1. There was no consideration of pacing the editing to the subject, image or audio 2. None of the shots had	1. There was some consideration of pacing the editing to the subject, images and audio 2. Some shots were trimmed	1. Editing had good pace appropriate to the subject, the image, and the audio throughout 2. All shots were

	been trimmed; they were left as they were shot 3. Did not use a variety of shots (wide, medium, close-ups) to describe a scene	3. Some use of wide-shots, medium shots and close-ups to describe a scene	trimmed; with clean In and Out points 3. Good use of wide shots, medium shots, and close-ups to describe a scene
Editing—Audio	1. No audio editing 2. No use of music 3. No use of sound effects 4. No use of atmosphere (Not all movies demand music, sound effects, or atmosphere, so this is included only if the project description requests it.)	1. Audio editing 2. Use of music 3. Use of sound effects 4. Use of atmosphere (Not all movies demand music, sound effects, or atmosphere, so this is included only if the project description requests it.)	1. Good audio editing 2. Good use of music 3. Good use of sound effects 4. Good use of atmosphere (Not all movies demand music, sound effects, or atmosphere, so this is included only if the project description requests it.)
Editing—Titles & Transitions	1. No titles were used 2. Cuts only editing, no transitions were used	1. Titles were used 2. Some transitions used but poorly executed	1. Creative use of titles 2. Transitions used and well executed
Teamwork	1. One person did most of all of the editing	1. There was some collaboration	1. All members of the group were involved in the decision making and had a chance for hands-on editing
Subtotal			/15

(Theodosakis 233-236)

APPENDIX O

TROY HICKS' ASSESSMENT RUBRIC FOR DIGITAL WRITING

Ideas for applying six traits to summative assessment of digital writing	
Ideas and Organization: The main idea and structure of the piece conveyed through text, hypertext, or multimedia elements, often partially determined by the medium in which it is presented	--Through a combination of spoken voice, background audio and music, and appropriate images and/or video the story has a compelling theme and clear beginning, middle, and end.
Voice: The persona writer adopts based on the purpose, audience, and topic	--The digital story literally has the narrator's voice conveying both the story itself and the tone of that story through inflection, pauses, and repetition, as appropriate. --Images and transitions contribute to the effect of the spoken voice.
Word Choice, Sentence Fluency, and Conventions: The selection of particular words, sentence structures, and the use of punctuation and grammar for rhetorical effect	--By combining spoken words, written words, and images, the digital story demonstrates a variety of sentence patterns that keep the viewer engaged in the entire multimedia experience
Presentation or Publication: The interaction of content and design for rhetorical effect	--The use of media in the digital story "illuminates" the main ideas, thus making it an experience that could not happen with written text alone.

(Hicks 115-116)

APPENDIX P

STUDENT SURVEY RESPONSES

At the end of the project, the students were asked to complete an evaluation of both their teacher and the activity. The students were asked the following five questions:

1. What did you think about doing the digital storytelling project?
2. How did the project go for your teacher?
3. What problems, if any, did you run into while making your digital story?
4. What did you or your teacher do to fix any problems that you ran into?
5. What suggestions do you have for teachers who want to try a digital storytelling project with his or her students?

A grid was composed with all of the students' responses:

	Q1: What did you think about doing DS project?	Q2: How did the project go for your teacher?	Q3: What problems, if any, did you run into while making DS?	Q4: What did your teacher do to fix problem?	Q5: What suggestions do you have for teachers?
1.	It was fun.	IDK	Adding music	n/a	n/a
2.	It was fun	No problems	I didn't have time to record voiceover.	Yes, she was helpful.	I want them to try it.
3.	Pretty cool.	I think it went well.	There wasn't a Movie Maker file on the computer.	IDK	Have Movie Maker file on the computer.

4.	It was not very complicated for me, only because I have had experience with this. Somewhat complicated, and a different way to do a project!!	It was very complicated for her, everyone needed help, and she's only one.	I had a big problem with it not saving into a movie file. It might be a bug?	She tried to help but it was not working with us.	It will be easier if you have experience with it.
5.	It was really fun and a big challenge for some people.	She thought it was really fun.	I got deleted a lot when I forgot to save.	Helped with the pictures.	Try to help more.
6.	It was okay	I think she did well.	I ran into blurry pictures.	I went to the website and reinstalled the pictures.	IDK
7.	I really didn't like it because it was boring and mine got deleted twice.	She did good but I really didn't need any help.	Um, finding the math, and my project got deleted.	I did it all over again and saved it as a movie after it got deleted.	?
8.	It was a fun thing but it was hard and I didn't like it.	I think she did kind of good.	My project got deleted and my pictures got erased.	Having my pictures erased.	It was fun and complicated, but I learned a lot.

9.	I thought it was good.	Good, she liked it.	Mine got deleted because I forgot to save it then I had to redo it.	I had to redo everything just to fix it.	Nothing.
10.	I liked it. It was fun.	I think she did a good job.	Pictures	She would help me get the pictures back.	To make sure the students understand.
11.	It was fun.	Good	No problems	No problems	Go for it!
12.	It was fun.	Yay!	It was deleting my pictures	I put the pictures back.	Make it fun.
13.	It was hard and fun when we were done.	n/a	The pictures were deleted.	n/a	It will be hard.
14.	It was fun and interesting and something I have never worked with.	She got it.	Getting my work deleted and finding pictures.	Not getting it deleted.	Nothing it's great!
15.	It was fun! And I think it is better than Apex!	Good/ Awesome	My project got deleted so I had to restart	Finding school appropriate pictures.	No video games [Don't do games project including video games.

16.	I thought it was a fun, creative, end of the year project, and I enjoyed doing it.	Yes, I think that my teacher did an excellent job teaching us, and helping us with the material.	I did not run into any problems while making my movie.	I didn't run into problems.	I would strongly suggest doing it.
17.	It was pretty cool but it was okay. I got to learn more about Movie Maker	Really good, she's an outstanding teacher	None, it was pretty easy. I'm understanding more.	She taught me how to do it so I understand more, it was pretty easy except it erased my pictures.	None
18.	Sometimes could be fun, but so much to do on them. Also I loved finding pictures and looking at new stuff to do.	Good, she understood most students and other not. She taught us some things about it.	Well, I didn't know we had to record our voices and put it into the movie.	Helped us mostly.	To explain everything you had to do.
19.	It was creative	I'd say very well.	No problems	No problems	Give examples
20.	It was easy. It was a little irritating though because I didn't have time to take video so I just used pictures.	Ummm, good.	None really	We had to hunt down some files.	Provide video cameras! Remember we still have other classes.

21.	I didn't like it because I'm not good with computers.	n/a	My project was deleted.	Nothing	It's hard. Don't do it.
22.	I think that it was very fun/tiring.	I really don't know if she liked it or not.	My voiceover wasn't long enough to go with the pictures.	I just redid my voiceover to match it up.	To watch your students and help them.
23.	It was a challenge to do.	She got a lot of work done so it went good. Yes!	The script and blurry pictures	She helped me on both by myself.	n/a
24.	Gymnastics?	Um, I wouldn't know because I'm not done, but I'm thinking it'll go well.	Recording	She went over it and told me what I need to redo.	Help your students more and spend extra time with them.
25.	It was okay.	She didn't like it that much.	My slam projects	No.	Try to do better.
26.	It was fun.	It was challenging them, getting them together.	None	Helped us step by step	Ask my teacher for tips!

27.	It was very fun. The only thing I didn't [like] was I thought we would video tape us playing and showing stuff about our game. Later I found out what we were doing.	I think it went good. We were all able to make our math movie and record our scripts.	I didn't know what to do until my teacher told me what to do.	She explained to me what I had to do so I understood it better.	Do it. Explain to them how to do it.
28.	At first, I thought it was pretty cool, but it got sort of boring more into it.	I'm not really sure. It is sort of hard to get our teacher to notice me.	I don't know, I couldn't get my stuff in.	Nothing really.	I wouldn't do it but if it is done, pay much more attention to the students.
29.	I liked it, it was fun.	IDK	It erased, but it was something wrong with my…. (can't read writing)	She (my teacher) saved it on her computer so it couldn't be erased.	IDK
30.	I thought it would be fun to do because I love this kind of stuff, so it was really fun to do. Some parts got hard, but nothing's completely easy.	It was pretty good overall, but we ran into problems with windows Movie Maker	I explained on how to play sudoku, so it was hard to make pictures of the sudoku board to match the way I explained it.	Besides from making the sudoku boards I really didn't have any problems.	Just have patience and use materials that would be easy to use and encourage your students!

31.	It wasn't as hard and as much work as I was expecting.	She had a lot to grade.	I had problems finding all of my pictures and getting my project recorded.	I had to restart one time because it wouldn't save.	Keep your class under control.
32.	I enjoyed a lot. I liked getting to make the math more fun and to be able to play games to help you in homework.	I think it was a great success.	Not really and but I'm good with computers and I had to help a lot of people	I went back and redid things in my movie that I didn't like.	To tie fun things that kids like into the projects, sports, games, etc.
33.	It was a little difficult. It was fun though	It was hard because the video and music was not working and lots of people's were deleted.	It was hard to find math that was in my game. Script was not very understanding.	Told me how. Helped me make it right. Looked into how to do something.	Make sure video works. Make sure game student picks has math in it. Make it shorter than 2 minutes. Don't make it worth so many points.
34.	I think it was very stressful at the end because I got the stuff I worked on deleted and all I was told to do was redo it.	I have no clue.	My entire project was deleted. Finding pictures	My teacher did nothing when I got all of my stuff deleted.	Make sure their stuff stays where it is.

35.	I thought it was okay. Kind of boring with all the pictures and voiceovers.	She seemed relaxed, so well.	None. All went well.	None, all went well.	Just to be creative and have fun.
36.	It sounded like fun.	Okay.	Saving issues, picture issues, matching issues.	Gave us more time.	Help them think of a game and try to help them with anything else.
37.	I thought it would be fun because it can be about sports.	I thought it went well. She wasn't there a lot because of testing.	I didn't run into any—maybe not finding pictures	I spent time at home looking for pictures.	I would say give them about a month to do so they can really research.
38.	I thought it was pretty fun because we did on whatever we wanted to.	She had to grade all of it and make sure we did the work.	I had problems staying on task because I was kind of bored.	I would fix it by making it more fun by doing other things.	I would tell them to make sure to make it fun and not boring.
39.	It is okay. I wish we had more time and I wish they longer.	It went good.	Nothing.	If there was, I think she would.	Give them time and resources.
40.	I thought that it was a very fun and learning experience. It was fun to write about a game I really like.	I think that she thought it was a good time.	Editing the voice recording	She helped when we asked for help, but not to the point where she did all of the work.	Just do it the way my teacher did it and be sure to give your students plenty of time to do it.

41.	It was a fun way to learn about Movie Maker	Fine—good teached. It good.	The slides if I could word in them and how much words.	She helped me and if she didn't know, she would get someone so they could help.	That it's very easy and get help from another teacher that has done it.
42.	I thought it was great. Just took a little work.	I guess it went fine.	I had problems keeping up with it.	They told me how to do it, and to solve my problem.	Oh, it's fun to do, you can learn from it. You should really give it a try.
43.	I thought it was fun.	Trouble	I had a lot of problems.	I had my friend help me.	Have fun.
44.	I thought it was fun because we had all the options in the world of appropriate games. It was also fun because we learned how to use Movie Maker.	It went great for my teacher. It was fun for everyone.	I had no problems except it deleted my movie one time.	She helped me get it back.	I don't know.
45.	I thought it was fun and I learned a lot.	Good.	None.	If I had anything she helped.	IDK
46.	I didn't like it much because it was glitchy.	It went well for her.	My computer wouldn't save my video as a movie.	She logged into my6 account and saved it.	--Give lots of time. Have the programs glitch free.

47.	It was fun because I never really knew that math was in basketball.	She thought it went fine. She explained everything to us very specific.	Finding fourth type of math used in basketball.	We went over it and fixed the problems.	It is really fun and get it done. Don't wait till the lat minute.
48.	I liked it because it was fun, easy, and we had a lot of time to do it.	Good.	It wouldn't save.	Nothing. I fixed it.	To do it.
49.	I think it was easy.	It went swimmingly.	I ran into timing.	I just redid it.	Do it, it's fun.
50.	I didn't really like it at all.	It went good for her.	Nothing.	If I had any then she would fix all of them.	You can but it's not the most fun project.
51.	I thought that it was awesome because it was something different than just writing.	She thought it was fine.	The main problem for me was that it was deleting my voice.	I just kept my voice record on the voice recorder so if it deleted again I would have it.	n/a
52.	It was fun.	It went fine.	None	Restart the computer.	None
53.	It was ok.	Ok.	None	n/a	Do what my teacher did
54.	I didn't like it because it took so long, and it was hard.	I think she was frustrated because no body did it.	I didn't get to use the recorder and that affected my grade.	Redid it.	Don't do it.

55.	Fun.	Good	No problems	Nothing	Help the students a lot.
56.	It was fun and I learned a lot of stuff that I didn't know before.	Easier because we taught ourselves	None	None	None. The way she taught us was fine.

APPENDIX Q

IRB APPROVAL

ASU ARIZONA STATE UNIVERSITY
RESEARCH AND ECONOMIC AFFAIRS

Office of Research Integrity and Assurance

To:	James Blasingame LL
From:	Mark Roosa, Chair Soc Beh IRB
Date:	02/26/2010
Committee Action:	**Expedited Approval**
Approval Date:	02/26/2010
Review Type:	Expedited F7
IRB Protocol #:	1002004823
Study Title:	Digital Storytelling in the Classroom
Expiration Date:	02/25/2011

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

APPENDIX R

IRB APPROVAL RENEWAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	James Blasingame LL
From:	Mark Roosa, Chair Soc Beh IRB
Date:	02/03/2011
Committee Action:	**Renewal**
Renewal Date:	02/03/2011
Review Type:	Expedited F7
IRB Protocol #:	1002004823
Study Title:	Digital Storytelling in the Classroom
Expiration Date:	02/02/2012

The above-referenced protocol was given renewed approval following Expedited Review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval of ongoing research before the expiration noted above. Please allow sufficient time for reapproval. Research activity of any sort may not continue beyond the expiration date without committee approval. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol on the expiration date. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study termination.

This approval by the Soc Beh IRB does not replace or supersede any departmental or oversight committee review that may be required by institutional policy.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.