ACADEMIC OUTCOMES AND NEW LITERACIES EVIDENT DURING A DIGITAL STORYTELLING UNIT WITHIN A SECONDARY ENGLISH CLASS: A CASE STUDY

By

REBECCA SHIELDS

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To my parents, family, and friends for their unceasing love and support throughout this journey

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LIST OF ABBREVIATIONS

ACT	American College Testing
IRB	Institutional Review Board
ISTE	International Society for Technology in Education
LMS	Learning Management System
NCTE	National Council of Teachers of English

Abstract of Dissertation Presented to the Graduate School
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By

Rebecca Shields

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The purpose of this study was to identify the academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. Students wrote “This I Believe” essays recounting real experiences that led to a life lesson and created digital stories that utilized pictures, music, and narration. The following research questions were used to guide the study: (a) In what ways, if any, are new literacies evident during a digital storytelling unit within an English 12 classroom? (b) In what ways, if any, do students meet English 12 objectives related to the writing and language standards during a digital storytelling unit?

Qualitative data were collected and triangulated through observations and field notes, reflections, and final student artifacts. Data were analyzed using the constant comparative method to identify common themes and patterns. The findings revealed four main areas in which new literacies were evident: working with ICTs and multimodal texts, locating information, evaluating information usefulness, and collaborative practices. Furthermore, the academic goals of the unit were met as evidenced in both student writing and the digital stories.

Students worked with and manipulated information and multimodal text using ICTs to create and share their projects. They located information for use within their projects as well as to solve issues that arose throughout the process. Once students were able to located information, they had to evaluate its usefulness within each situation to determine if it was beneficial or pertinent their needs. Furthermore, although these were individual projects, the unit was social in nature, and students work collaboratively to provide feedback, opinions, and help through the project. These transferable skills transcend knowledge that can be tested with a pen and paper, and these learning behaviors will help them work efficiently and effectively in modern society.

Student gains in motivation and new literacy skills and content mastery warrant more project-based learning such as digital storytelling. However, assumptions should not be made regarding student technology skills such as emailing, file structure, and search techniques. Instead, teachers need to continue to teach these skills within the classroom to provide professional experience with these types of literacies. Furthermore, schools must seek to build a robust inventory of devices and platforms, while establishing a robust infrastructure to support these devices during projects. Finally, professional development and support are key factors in the success of teacher implementation of these units; therefore, schools that want to make the shift to allowing students to interact with new literacies, need to make sure they have a solid professional development plan and ample support for teachers and students.

Researchers have shown that students need new literacy skills in order to live and work in modern society; therefore, teachers must consider new methods in order to

meet this need. Based on the results of this study, digital storytelling is a method of providing students with the opportunity to interact with new literacy skills within a secondary English classroom without sacrificing traditional objectives and academic outcomes.

CHAPTER 1
INTRODUCTION

Technology is quickly becoming a significant staple in today's classroom. With the growing importance of 21st century skills, teachers need to understand how technology can be used as a valuable learning tool (Ohler, 2009). However, the simple act of adding a computer to a lesson is not enough and has little effect on the classroom environment (Robin, 2008). Therefore, teachers must integrate meaningful technology that creates authentic learning experiences, engages and motivates student learners, and also prepares them to live and work in the real world (Sadik, 2008). While not new to education, literacy is another topic of great discussion among educators. According to the New London Group (1996), the fundamental purpose of education "is to ensure that all students benefit from learning ways that allow them to participate fully in public, community, and economic life" (p. 1); literacy pedagogy is a vital factor in accomplishing this goal.

Education and literacy are at a crossroads. Never before have we as a society seen a concept adopted so quickly or by as many people at one time as we have with technology and the Internet (Leu et al., 2011). Today's students have more ways of interacting with academic content, and with the rapid expansion of technology in education and the world these interactions are becoming more complex (Karchmer-Klein & Shinas, 2012; Spire, Morris, & Zhang, 2012). As a result, the idea of literacy is ever-evolving. Since expectations for what students need to learn and be able to do are also changing, students need this new set of skills more than ever before (Anstey & Bull, 2006; Karchmer-Klein & Shinas, 2012; Leu, Kinzer, Cioro, & Cammack, 2004; New London Group, 1996).

According to Tan and Guo (2010), this new skill set goes beyond traditional literacies, such as reading and writing, to include new literacies related to communicating and working with multimedia and technology. Consequently, teachers need to find ways to ensure their students are developing competencies based on the ever-changing nature of literacy pedagogy through authentic learning environments (New London Group, 1996; Street, 2003; Tierney, Bond, & Bresler, 2006). Digital storytelling is becoming a popular method for students to work with multimedia and technology through hands-on activities (Anderson, 2010; Barrett, 2006; Gregory, Steelman, & Caverly, 2009; Hull & Nelson, 2005; Robin, 2006; Rossiter & Garcia, 2010; Sadik, 2008; Skouge & Rao, 2009).

Background

Digital storytelling is the act of joining traditional storytelling with modern multimedia tools (Ohler, 2005); it is a powerful medium because it weaves "images, music, narrative and voice together, thereby giving deep dimension and vivid color to characters, situations, experiences, and insights" (Rule, 2010, p. 56). Researchers have shown that digital storytelling is a dynamic way to do the following:

- engage and motivate students (Li & Morehead, 2006; Malin, 2010; Ohler, 2005; Robin, 2006; Sadik, 2008; Skouge & Rao, 2009; Sweeder, 2008; Ulbig, 2010);
- increase writing skills (Gakhar & Thompson, 2007; Sylvester & Greenidge, 2009);
- allow students to demonstrate their understanding in creative ways (Robin, 2008; Skouge & Rao, 2009; Thesen & Kara-Soteriou, 2011);
- provide an outlet for students to work with 21st century skills (Czarnecki, 2009; Robin, 2008);
- utilize multiple types of literacy (Churchill, Ping, Oakley, & Churchill, 2008; Li & Morehead, 2006; Ohler, 2005; Robin, 2008; Thesen & Kara-Soteriou, 2011).

The majority of these studies were conducted at the elementary and higher education levels. However, a pilot study conducted by the current researcher during the 2011-2012 school year on the digital storytelling within an English 12 classroom revealed the same benefits applied at the secondary level. The focus of the pilot study was to examine student engagement and motivation (Harris, 2010; Pike, Smart, & Ethington, 2012; Skinner, Zimmer-Gembeck, & Connell, 1998). Consistent with previous studies, pilot study results revealed that digital storytelling had a positive effect on student engagement, motivation, and subject area content based on the course of study at the secondary level. Based on these results, one of the teachers who participated in the pilot advocated for using digital storytelling again during the 2013–2014 school year, but with a slightly different focus.

As of 2012, the state of Alabama requires that all schools implement common core standards to create “College and Career Ready” students. This new focus emphasizes fostering multiple types of literacy, or new literacies, to prepare students for success in college and modern society. These new standards require students to be literate in more than just reading and writing. Digital storytelling provides an opportunity to interact with literacy beyond the traditional definition of literacy. Therefore, this current study focused on the academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. For the purpose of this study, academic outcomes included students meeting course and assignment objectives as aligned by the state course of study.

Conceptual Framework of Digital Storytelling

As stated by Moore-Hart (2008), when technology is implemented into the curriculum to support the content, it has a positive effect on learning. Technology

enhances course content and, thereby, connects students to the learning process (Carr & Jitendra, 2000; Keengwe, Onchwari, & Wachira, 2008; Sweeder, 2008). The act of storytelling has also been shown to connect students with the "process of meaning-making" (Malita & Martin, 2010, p. 3061). Digital storytelling combines the age-old methodology of storytelling with the modern day implementation of technology to engage students in authentic activities that enhance learning. Therefore, digital storytelling is rooted in constructivism in which learning integrates the use of meaningful content (Heo, 2011).

Constructivism places the responsibility of learning in the hands of the individual, as he or she learns through personal experiences (Heo, 2011). Technology allows teachers to employ constructivist principles by promoting a student-centered atmosphere (Norum, Grabinger, & Duffield, 1999). A student-centered classroom promotes student responsibility and ownership; thereby making the learning more meaningful to the student (Anderson, 2010). According to Anderson (2010), when students take ownership of their learning, they become highly motivated and engaged in the learning process.

Digital storytelling facilitates learning opportunities for students to solve real-world problems throughout the learning experience, which makes the content more meaningful and relevant (Heo, 2011). As students participate in digital storytelling activities, they develop critical life competencies, such as collaboration and critical thinking skills (Carr & Jitendar, 2000; Kieler, 2010). These skills, along with others embedded in the digital storytelling process, can be considered constructivist strategies (Barrett, 2006; Nanjappa & Grant, 2003; Sadik, 2008).

According to Thesen and Kara-Soteriou (2011), “to be literate, students must do more than simply read and write; they must comprehend, apply, analyze, synthesize, evaluate, and create in order to maneuver through increasingly complex information” (pp. 99-100). Ohler (2009) further suggested that being literate involves being able to read and write using current media. To equip students with the technological skills they will need in the future, schools must provide opportunities for students to transform their knowledge and skills by interacting with literacy in new ways (Anstey & Bull, 2006; Mullen & Wedwick, 2008). In other words, students need to interact with multiple types of literacy. The literacy of today incorporates a blend of literacies to develop well-informed and well-rounded citizens (New London Group, 1996). The convergence of multiple types of literacy has become a key tenant to literacy today (Jenkins, 2006; Potter, 2010).

It is this convergence that teachers must acknowledge in their professional practice. Literacy can no longer be compartmentalized into the separate areas of written and spoken language, media literacy, visual literacy, and digital literacy. Rather, today’s society requires that literacy draw from all types of information and be multimodal in nature. This more dynamic view of literacy allows students to extract meaning from and work with all types of text by interacting with different types of signs or symbols, known as semiotic systems. As noted by Anstey and Bull (2006), the five semiotic systems include linguistic, visual, auditory, gestural, and spatial.

The linguistic mode, written and spoken word, was the primary semiotic system of literacy pedagogy in years past; however, this is no longer the case (Anstey & Bull, 2006; Jewitt, 2008). According to Connor and Sullivan (2012), it is the job of teachers

and literacy educators “to broaden students’ semiotic toolkits” (p. 221) by allowing them to work with and express their ideas in a variety of ways with a variety of tools (Siegel, 2006).

New literacies, which include technological tools like digital storytelling, are defined as the ability, “to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others” (Leu et al., 2004, p. 1572)?

The literacy of today requires the blending of all five semiotic systems, so that “no one mode stands alone in the process of making meaning; rather, each plays a discrete role in the whole” (Jewitt, 2008, p. 247). The products that are created when multiple semiotic systems are used to communicate are referred to as multimodal texts. It is within these multimodal texts and it’s use of multiple semiotic systems in which meaning making within literacy is based instead of relying solely on linguistics or the traditional definition of literacy (Anstey & Bull, 2006; Jewitt, 2008; New London Group, 1996).

Literacy now requires an understanding of all five semiotic systems as well as how they interact with one another and provide meaning (Anstey & Bull, 2006). Multimodal texts, including print, video, still images, audio, and music, provide students with new ways of expressing their ideas and knowledge (Spire et al., 2012). Digital storytelling incorporates all types of literacies and multimodal texts.

By working with multimodal texts, students can interact with new types of communication. The digital revolution, however, has changed the ways in which

individuals access and communicate information (Marcus, 2009; Morrell, 2012; Wolfe & Flewitt, 2010). Technology has become an increasingly popular method for students to communicate with their peers and the world (Spires et al., 2012). Leu et al. (2011) suggest that information and communication technologies (ICTs) are important because of the information they can provide, but new literacies are required to effectively use this information.

Statement of Problem

The aim of this current study was to identify academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. As stated by the National Council of Teachers of English (NCTE) (2009):

> Fundamental changes in the economy, jobs, and businesses have reshaped industry and the nature of work. Today, employees engage with a technology-driven, diverse, and quickly changing global economy that requires new and different skills. Literacy demands have changed along with these changes in society and technology. (p. 15)

Society is now capable of obtaining digital information quickly. According to Morrell (2012), the speed of transmission is only going to get faster. As educators, it is important to prepare students for this digitalized society so that they can function in the real world both professionally and personally (Mills, 2010). By implementing new literacy practices in the classroom, students are exposed to these new forms of literacy and therefore more comfortable with using them outside of school (Cervetti, Damico, Pearson, 2006). According to Wilber (2012), "new literacies are so interwoven into the fabric of our worlds that it is essential for each of us to understand them more deeply…" (p. 410). Forzani and Leu (2012) noted that new literacy instruction is not only important for students, but that it will "define their future" (p. 421). Therefore, new literacy instruction needs to be implemented into the classroom.

Based on these new expectations, teachers need to prepare students to live and work in a world that requires problem-solving skills and the ability to collaborate and interact with multiple types of texts, technology, and people in a variety of situations (NCTE, 2009). Therefore, teachers must bring new literacies into the curriculum. Yet many teachers still view content, literacy, and technology as isolated sets of skills that can be taught separately (Draper, Smith, Hall, & Siebert, 2005). Teachers who use project-based learning techniques, on the other hand, regard these skills as fluid and recommend that students be given opportunities to work with content, literacy, and technology together in real world situations in order to create college and career ready students.

The new digital world is changing society's view of what literacy is and adds new elements to the traditional definition of simply reading and writing (Buschman, 2009; Hsu, & Wang, 2010). Literacy now includes the ability to communicate and express thoughts effectively using technology (Cope & Kalantzie, 2000; Gallagher & Nteliglou, 2011; New London Group, 1996; Street, 2003).

In other words:

> [t]o be literate today often means being able to use some combination of blogs, wikis, texting, search engines, Facebook, foursquare, Google Docs, Skype, Chrome, iMovie, Contribute, Basecamp, or many other relatively new technologies, including thousands of mobile applications, or "apps". (Leu et al., 2011, p. 6)

These skills and tools are becoming increasingly pervasive in the classroom; thus, teachers must recognize the growing importance of new literacies (Hsu & Want, 2010; Karchmer-Klein & Shinas, 2012). However, new literacy practices can be complicated for teachers who are comfortable with their current practices. Additionally, current high stakes testing still assess traditional literacies (Kellinger, 2012; Wimmer,

Skramstad, & Khan, 2012). Consequently, traditional literacy pedagogy remains the primary form of literacy instruction. As demonstrated in the literature, however, students are becoming increasingly disengaged with these types of practices (Alvermann, 2008; Clark, 2010; Connor & Sullivan, 2012; Honan, 2012). Teachers may be uncertain about implementing new literacies into their classrooms; however, students need to work with these new skills in order to be successful. Experts have recommended that teachers challenge their conventional views of literacy (Rantala & Korhonen, 2008; Tierney et al., 2006).

In 2010, the state of Alabama completely revised the English / Language Arts state standards. As of 2012, the state requires that all schools implement these standards to create "college and career ready" students. These new standards or course objectives are a combination of traditional standards and the *Common Core State Standards for English Language Arts & Literacy in History/Social studies, Science, and Technical Subjects*. The new focus emphasizes fostering multiple types of literacy, or new literacies.

New literacy practices entail more than simply applying technology to a lesson; it requires teachers to challenge their students in new ways while still covering the traditional objectives and skills (Honan, 2012). In order to meet the requirements of the Common Core and engage students in meaningful ways, teachers must find ways to implement content, literacy, and technology skills into authentic and purposeful lessons. This new challenge of creating college and career ready students, while still covering course content and objectives, has become a common obstacle in Alabama classrooms. Therefore, the purpose of this study was to identify the academic

outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom.

Significance of Study

At a time in which educators and stakeholders are increasingly calling for reforms within the educational system, it is imperative that studies be conducted regarding teachers who are implementing innovative lessons in order to help inform future decisions regarding curriculum and instruction. In order to meet the new college and career ready standards, educators must identify ways to promote effective instruction that incorporate new literacies while still meeting traditional objectives. To better understand how to implement new literacies in education, it is important to implement and assess the effectiveness of new and innovative methods of instruction. Thus this study strived to identify the academic outcomes of using digital storytelling as a means of implementing new literacies.

By identifying new literacies and academic outcomes, future educators may be prepared to determine whether digital storytelling best fits their lesson needs as well as identify the best methods for introducing this technology at the secondary level. Finally, by exploring the impact on student achievement this study identified the influences digital storytelling has beyond new literacies to ensure that students are also meeting the traditional academic objectives.

Educators need to focus on fostering new literacies among their students that complement students' ability to read and write (Anstey & Bull, 2006). This study considered whether or not digital storytelling introduced these types of skills into the classroom and fostered new literacies. Therefore, the significance of this study is the

analysis of academic outcomes and new literacies associated with the implementation of digital storytelling into a secondary classroom to help inform future educators.

Research Questions

This qualitative study explored the academic outcomes and new literacies associated with the use of digital storytelling in the secondary classroom. A case study approach was used to conduct this study. For the purpose of this study, the following definition of new literacy was used: the ability to use ICTs to "identify questions, locate information, evaluate the information, synthesize information to answer questions, and communicate the answers to others" (Leu et al., 2004, p. 1572). The overarching concern for this study was to identify the academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. In order to analyze this concern, the following research questions were answered.

1. In what ways, if any, are new literacies evident during a digital storytelling unit within an English 12 classroom?
2. In what ways, if any, do students meet English 12 objectives related to the writing and language standards during a digital storytelling unit?

CHAPTER 2
LITERATURE REVIEW

While not new to education, digital storytelling is quickly becoming a popular method of enhancing student learning (Anderson, 2010; Barrett, 2006; Gregory et al., 2009; Robin, 2006; Sadik, 2008; Skouge & Rao, 2009). Digital storytelling is the act of joining traditional storytelling with modern multimedia tools (Bolch, 2008). Benmayor (2008) stated that digital storytelling provides a good blend of creativity, play and analytical thinking; therefore, it works well with project-based learning. Project-based learning is "a comprehensive approach to instruction" in which students learn through real-world experience and hands-on discovery (Anderson, 2010, p. 20). As a form of project-based learning, digital storytelling is a powerful way to: (a) engage students (Li & Morehead, 2006; Malin, 2010; Robin, 2006; Sadik, 2008; Skouge & Rao, 2009; Sweeder, 2008), (b) improve writing skills (Gakhar & Thompson, 2007; Sylvester & Greenidge, 2009), (c) facilitate differentiated instruction (Benmayor, 2008; Kieler, 2010; Sweeder, 2008), (d) demonstrate understanding in creative ways (Robin, 2008; Skouge & Rao, 2009; Thesen & Kara-Soteriou, 2011), and (e) provide an outlet for students to learn 21st century skills (Czarnecki, 2009; Fredricks, 2009; Malita & Martin, 2010; Robin, 2008) and media literacy (Churchill et al., 2008; Li & Morehead, 2006; Robin, 2008; Thesen & Kara-Soteriou, 2011).

This literature review focused on the benefits of digital storytelling and how it is best implemented into the curriculum. This focus was chosen in order to acquire a full understanding of the rationale and best practices of digital storytelling as a means of project-based learning and implementing new literacies, because both are becoming widely used in all levels of education. A synthesis of this information provides not only

an overview for digital storytelling and new literacies, but also a rationale for its implementation. This review addresses the benefits of digital storytelling and then explores the implementation of digital storytelling as a form of project-based learning.

To consider these questions, a search of the literature was executed using the following key terms: digital storytelling, project-based learning, technology integration, digital stories, storytelling, media literacy, and digital narratives. These key terms were searched within several databases, including Wilson Education, EBSCO, ERIC, JSTOR, and EdITLib. Articles were sorted by overall theme to help organize the information in a logical pattern.

For the purpose of this literature review, a specific grade level was not selected. This review considers literature from the primary level through higher education. The number of resources for each level was limited, this decision was made in order to develop a full understanding of the benefits and best practices of digital storytelling. However, it should be noted that most literature on digital storytelling is focused on the primary and high education levels.

Digital Storytelling Overview

Traditional storytelling is a powerful teaching strategy that has been used for many decades to share experiences and explore ideas (Skouge & Rao, 2009; Thesen & Kara-Soteriou, 2011). Digital storytelling is a proven instructional method that helps students improve writing skills, understand narrative form, improve visual literacy, and develop communication and public speaking skills (Dillingham, 2005; Sylvester & Greenidge, 2009). Malin (2010) noted that without the ability to visualize a story, students lose their connection to it. According to McDrury and Alterio (2001), storytelling is a natural human practice, and digital storytelling adds to it by “weaving images,

music, narrative and voice together, thereby giving deep dimension and vivid color to characters, situations, experiences, and insights" (Rule, 2010, p. 56). The core of digital storytelling is based in the traditional methodologies of storytelling (Garcia & Rossiter, 2010; Sheneman, 2010). Digital storytelling has been referred to as the modern day application of storytelling, one that can be utilized across different subject areas and levels (EDUCAUSE Learning Initiative, 2007; Garcia & Rossiter, 2010; Heo, 2011).

Digital storytelling and project-based learning are proven methods for technology-rich learning; therefore, the combination of the two is a compelling way for teachers to implement meaningful technology to motivate and engage students (Gakhar & Thompson, 2007; Robin & Pierson, 2005). According to the EDUCAUSE Learning Initiative (2007), digital storytelling is "the practice of combining narrative with digital content, including images, sound and video, to create a short movie, typically with a strong emotional component" (p. 1). Mullen and Wedwick (2008) explained that it "is not simply narrating a set of pictures. It is the process of using words and pictures to tell a story" (p. 68). With today's technologies, digital stories can be created by people anywhere and shared with people everywhere (Meadows, 2003; Robin & Pierson, 2005). Once a video is uploaded to the Internet, digital stories can potentially reach millions of people worldwide (Chung, 2007). Therefore, students can create projects that reach far beyond the classroom to a worldwide audience (Borneman & Gibson, 2011). This new, larger audience may motivate students to produce their best work while improving their ability to analyze their peers' work (Kearney, 2011; Robin, 2006).

As technology continues to change and develop, digital storytelling is a constantly evolving practice (Rule, 2010; Thesen & Kara-Soteriou, 2011). Further, with

decreasing costs of technology digital storytelling is more accessible than ever before (Meadows, 2003; Resnick, 2002; Robin, 2008). The number of teachers using digital storytelling continues to increase, yet Dogan and Robin (2008) have warned that regardless of the focus, subject area content, writing, or technology, digital storytelling needs be tied directly to curriculum.

New Literacies Overview

In the traditional sense, literacy is limited to reading and writing; however, the definition of literacy has been expanded to include the ability to communicate with others in a variety of ways and through a variety of texts in order to fully function in modern society (Hobbs, 2011; Mayer, 2008; New London Group, 1996). Thus, literacy today means being able to work with all types of texts, including print based, media based, and even gestural (Anstey & Bull, 2006). Based on this contemporary notion of literacy, "a person must be literate not only with paper text but also with live (e.g. face-to-face) encounters and electronic works" (Anstey & Bull, 2006, pp. 20-21). O'Brien and Scharber (2008) noted that many teachers still rely on print-based literacies, which is counterintuitive to what students use outside of the classroom. This outdated approach to literacy has faced harsh criticism, as education needs to bring in new types of texts (Jewitt, 2008; Sefton-Green, 2006).

This does not suggest that new literacies replace traditional literacies. Instead, Connor and Sullivan (2012) argued that there needs to be a blend of both old and new literacy practices in which each informs the other. Morrell (2012) proposed that new literacy practices work best when they do not abandon but embrace traditional literacies. R. Selfe and C. Selfe (2008) observed the following:

> students no longer live in a *this or that* culture (as in choosing between writing or multimodal composing), but, rather, in a *both this and that* culture... one that expects both writing and multimodal composing to be essential components of students' literacy skill sets and understandings. (p. 85)

By merging traditional literacy instruction with new approaches that include enhanced literacy skills, teachers should be able to keep pace with the ever-changing world of technology. Further, these complementary approaches can promote more complex literacy skills sets among students (Karchmer-Klein & Shina, 2012; Wilber, 2012; Wimmer et al., 2012). This study takes traditional literacy practices of research and writing and builds on these traditional literacies by applying a multimedia component. For this study, students will create digital stories and thereby interact with new literacies.

Conceptual Framework

As stated by Moore-Hart (2008), when technology is implemented into the curriculum to support the content, it has a positive effect on learning. According to the experts, technology makes course content meaningful, and in return, connects students to the learning process (Carr & Jitendra, 2000; Keengwe et al., 2008; Sweeder, 2008). The act of storytelling has also been shown to connect students with the "process of meaning-making" (Malita & Martin, 2010, p. 3061). Digital storytelling combines the age-old methodology of storytelling with the modern day implementation of technology to engage students in authentic activities that enhance learning. Therefore, digital storytelling is rooted in constructivism in which learning integrates the use of meaningful content (Heo, 2011).

Constructivism places the responsibility of learning in the hands of the individual, as he or she learns through personal experiences and doing (Heo, 2011). Technology

allows teachers to employ constructivist principles by promoting a student-centered atmosphere (Norum et al., 1999). A student-centered classroom fosters student responsibility and ownership; thereby making the learning more meaningful to the student (Anderson, 2010). According to Anderson (2010), when students take ownership of their learning, they become highly motivated and engaged in the learning process.

Digital storytelling uses authentic activities to implement the principles of constructivism (Sweeder, 2008). It creates a learning opportunity for students to solve real-world problems throughout the learning experience that makes the content more meaningful and relevant (Heo, 2011). As students participate in digital storytelling activities they develop critical life skills, such as collaboration and critical thinking (Carr & Jitendar, 2000; Kieler, 2010). These skills, along with others embedded in the digital storytelling process, can be considered constructivist strategies (Barrett, 2006; Nanjappa & Grant, 2003; Sadik, 2008).

Digital storytelling provides a comprehensive opportunity for students to learn by doing, it provides an opportunity for project-based learning. Project-based learning is based on student learning communities and aligns with student needs and learning styles (Anderson, 2010; Percy, 2003). Project-based learning provides "more enriched learning opportunities than the traditional teacher-directed unit" (Dresden & Lee, 2007, p. 1). In project-based learning, students learn skills by completing hands-on tasks. In this way, students become active participants in their own learning. Researchers have found that active participation has a positive impact on student learning environments (Eskrootchi & Oskrochi, 2010; Griffiths, Oates, & Lockyer, 2007). It is highly

recommended that teachers who implement digital storytelling units also have an understanding of project-based learning.

Since digital storytelling is rich in multimedia, the principles of multimedia learning apply to digital storytelling as well (Heo, 2011; Robin, 2006; Sadik, 2008). Researchers have shown that student interest increases and organizational skills improve through the use of multimedia projects (Carr & Jitendra, 2000; Nowaczyk, Santos, & Patton, 1998; Robin, 2008). Ulbig (2010) discovered that visual images used in the classroom not only increased student engagement, but also improved student recollection. Hibbing and Rankin-Erikson (2003) purported that multimedia positively impacts student retention and comprehension of new content. The research literature is replete with examples in which multimedia presentations have had a positive influence on learning and students learn better through the combination of seeing, hearing, and doing rather than just hearing alone (Mayer, 1997; Smith & Woody, 2000). Based on Mayer's (1997) cognitive theory of multimedia learning, students are able to sort visual cues more quickly than auditory information. While Bartlett and Strough (2003) and Smith and Woody (2000) both identified higher student grades in courses that utilized multimedia, Smith and Woody (2000) noted that multimedia had a much greater effect on visually-oriented students. Further, the authors suggested that the use of multimedia might even hinder students who prefer auditory information. Researchers have established that students enjoy classes that utilize multimedia (Nowaczyk et al., 1998); therefore, the use of multimedia may outweigh any potential drawbacks within the learning process (Bartlett & Strough, 2003).

Benefits of Digital Storytelling

The benefits of digital storytelling are widely documented in the literature and are comparable across academic levels. The most widely discussed benefits are student engagement (Carr & Jitendra, 2000; Kearney, 2011; Robin, 2008) and motivation (Kajder, 2004; Kieler, 2010; Sweeder, 2008). Improvement to student writing is also cited as a key benefit in the literature (Gakhar & Thompson, 2007; Sylvester & Greenidge, 2009). Furthermore, digital storytelling introduces students to multiple types of literacy (Dogan & Robin, 2008; Li & Morehead, 2006) and 21st century skills (Czarnecki, 2009; Moore-Hart, 2008; Robin, 2008), specifically creativity and collaboration (Garcia & Rossiter, 2010; Percy, 2003; Robin, 2006; Sadik, 2008; Sweeder, 2008). Digital storytelling has been shown to connect students to course content (Harris, 2007; Thesen & Kara-Soteriou, 2011), while presenting students with deep learning opportunities (Kieler, 2010; Robin, 2008; Sadik, 2008). Each of these benefits dealing with new literacy instruction is discussed in greater detail throughout this section.

Engagement

Student engagement is a widely discussed benefit of digital storytelling and project-based learning, which Eskrootchi and Oskrochi (2010) emphasized as a key factor in successful learning. Throughout a digital storytelling unit, students are engaged in project-based learning with a specific purpose; therefore, they have a desire to succeed both inside the classroom and beyond (Percy, 2003). Additionally, researchers have noted that students who interact with a project-based learning unit are able to transfer the skills and knowledge they acquire to other situations (Mitchell, Foulger, Wetzel, & Rathkey, 2009). Carr and Jitendra (2000) observed that students engaged in

project-based learning were actively using and improving basic skill sets within authentic and meaningful situations. As stated by Anderson (2010), project-based learning "engages students—and gives the instructor the opportunity to encourage teamwork, problem-solving skills, and community involvement" (p. 20). Rochelle, Pea, Hoadley, Gordin, and Means (2000) argued that active engagement, participation in groups, frequent interaction and feedback, and connections to real world context were deciding factors in what and how students learn. Project-based learning has been shown to address all of these factors (Percy, 2003).

Furthermore, a key finding in the literature is that digital storytelling increases student engagement (Barrett, 2006; Kearney, 2011). When digital storytelling is implemented as a project-based learning unit, engagement is a noteworthy benefit. Teachers are able to engage students, while still promoting deep understanding of the content (Barrett, 2006; Dogan & Robin, 2008; Heo, 2011; Roby, 2010; Sadik, 2008). Griffiths et al. (2007) established that engagement increased a student's retention rate because he or she was immersed in the learning process. As students work with the content, they form connections that create deeper understanding of new concepts (Heo, 2011). According to Ulbig (2010), engagement within a course improves student learning and retention of new information. Robin (2006) argued that due to the active nature of project-based learning and digital storytelling, student recollection and comprehension improved. Multiple authors have noted that digital storytelling engages both the student working on the project as well as the audience which helps to create meaning for both parties (Barrett, 2006; Gracia & Rossiter, 2010; Kearney, 2011).

According to Gregory et al. (2009), students engage in the digital storytelling process because they are drawn to the idea of "becoming a 'movie producer'" (p. 42). Kajder (2004) suggested that students are also given the opportunity to work as artists, programmers, screenwriters, and designers. Dogan and Robin (2008) corroborated this "director's chair effect" and also established that students can communicate and express themselves in ways they have never been able to before.

Additionally, digital storytelling can be used to engage students in a variety of curricula, like social studies and science (Harris, 2007; Thesen & Kara-Soteriou, 2011). Digital storytelling provides students with an opportunity to look at themselves through their work (Kajder, 2004), and examine their "community, culture, local values, and traditions" (Skouge & Rao, 2009, p. 54). Kearney (2009) and Li and Morehead (2006) indicated that digital storytelling allowed their students to be engaged in reflection throughout the process, an important trait to possess in modern society (Churchill et al., 2008; Gakhar & Thompson, 2007; Malita & Martin, 2010). McDrury and Alterio (2001) advised that teachers develop a comprehensive understanding of different storytelling methods in order to use reflection as a learning tool.

Motivation

Sweeder (2008) established that digital storytelling increased student motivation because they were a part of the process, thus, making the curriculum more significant to them. Students are provided opportunities throughout the digital storytelling process to make decisions (Kajder, 2004). Ivey (1999) asserted that students become motivated when they are allowed to make decisions and bring in texts that appeal to their interests. Students have responsibility throughout the digital storytelling process that not only motivates them, but also leads them to take ownership (Anderson, 2010; Percy,

2003). Mitchell et al. (2009) have warned that ownership can be lost if the teacher is too involved in the decision-making process. Students need to have as much responsibility and choice as the unit will allow. Teachers have found that shared ownership promotes learning through discovery, collaboration and the sharing of knowledge among students (Blumenfeld et al., 1991; Moore-Hart, 2008). Carr and Jitendra (2000) asserted that implementing a project-based unit had a positive effect on student learners, and that "students felt important, unique, and deserving of praise, and for some, it was the first time in their lives they had felt this way" (p. 43).

Finally, multimedia motivates students because it makes the information more accessible for students at all levels (Carr & Jitendra, 2000; Kieler, 2010; McLellan, 2006). Researchers in the areas of technology and writing have established that students become motivated in the writing process when technology is available (Sadik, 2008; Thesen & Kara-Soteriou, 2011). Further, Warschauer, Arada, and Zheng (2010) discovered that students who had daily access to computers with an Internet connection not only wrote in a variety of formats, but also wrote better than their peers who did not have access to this level of technology. Regardless, Moore-Hart (2008) established that the use of technology and laptops alone cannot improve everyone's writing.

Writing Skills

Digital storytelling provides an opportunity for students to create genuine products while engaging them in the writing process (Gakhar & Thompson, 2007; Sylvester & Greenidge, 2009). These genuine products go beyond the traditional notion of writing to incorporate new literacies as students are writing about meaningful text that they are connected to personally. Because students are engaged in this process, they are more likely to improve their writing skills and, consequently, become better writers

(Ballast, Stephens, & Radcliffe, 2008; Gakhar & Thompson, 2007; Nelson, Hull & Roche-Smith, 2008). Digital storytelling can serve as a source of encouragement for individuals who struggle with the processes of writing and revising and engender positive feelings towards writing overall (Sylvester & Greenidge, 2009). Kajder (2004) noted that digital storytelling helped improve student writing in her classroom. Through digital storytelling, students obtain a sense of audience awareness which lower level writers commonly lack (Sylvester & Greenidge, 2009). Sadik (2008) also observed that student writing became more complex as they felt more comfortable with both writing and technology. While many students may have the skills and experience necessary for digital storytelling, Ohler (2009) has indicated although many students might already have experience with technology, they still need help working with a new type of media and the narrative process. Meadows (2003) further noted that while the technology involved in digital storytelling might not be easy for everyone, it can be learned.

Multiple Literacies

Throughout the process of digital storytelling students are given the opportunity to work with many types of literacy (Robin, 2008). Specifically, students work with digital, media, visual, language and performance literacy (Churchill et al., 2008; Dillingham, 2005; Fredricks, 2009; Li & Morehead, 2006; Robin, 2008; Roby, 2010). This combination of literacies supports new literacies, and exposes students to new literacy skills. Despite the technological resources, O'Brien and Scharber (2008) noted that many teachers still rely on print-based literacies, which is counterintuitive to what students use outside of the classroom. Thesen and Kara-Soteriou (2011) contended that if students are going to be active participants in today's world they need to be able to write and use technology to tell their story. According to Thesen and Kara-Soteriou

(2011), “to be literate, students must do more than simply read and write; they must comprehend, apply, analyze, synthesize, evaluate, and create in order to maneuver through increasingly complex information” (pp. 99-100). Ohler (2009) further suggested that being literate is also being able to read and write using current media. Schools need to provide opportunities for students to gain the technological skills that they will need in the future (Mullen & Wedwick, 2008). In addition to working with multiple literacies, students participate in real world situations fostering new skills that are useful in life (Ohler, 2009).

Researchers have also noted that digital storytelling and project-based learning provide these types of authentic learning experiences for students while still maintaining traditional learning goals and course content (Carr & Jitendra, 2000; Eskrootchi & Oskrochi, 2010). Dogan and Robin (2008) documented that teachers who implemented digital storytelling into their curriculum saw improvements among their students in several skills “such as technical skills, presentation skills, research skills, organizational skills, and writing skills” (p. 4). According to Nation (2008), students learn through discovery activities that promote critical thinking and problem-solving skills in real world situations. Brown, Collins, and Duguid (1989) noted that these authentic learning opportunities help students apply their knowledge to the outside world in ways that textbooks cannot. When students begin to work in authentic learning environments they see the relevance of the knowledge and skills they are acquiring as well as the importance of real world issues that affect them personally (Carr & Jitendra, 2000). These real world situations make course content significant to student and help students further engage in the lesson (Gakhar & Thompson, 2007).

Multiliteracies bring in all types of texts. Anstey and Bull (2006) define multiliteracies as "being cognitively and socially literate with paper, live, and electronic texts" (p. 23). This moves beyond a basic understanding of reading and writing and requires teachers and students to become active participants in society in an effort to change it and become influential in the future (Jewitt, 2008). Multiliteracies look at how literacy has "been influenced by local and global, social, cultural, and technological change" (Anstey & Bull, 2006, p. 55). Therefore, multiliteracies look beyond the classroom and looks at literacy both within the school and out into the community which allows students to interact with texts that they will need in all areas of their lives (Callow, 2008; Jewitt, 2008). Therefore, in addition to working with multiple types of literacy, students participate in real world situations fostering new skills that are useful in life (Ohler, 2009).

Life experiences inform literacy. Students use their past experiences as resources when they are engaged in literacy practices and meaning making which makes up a student's identity (Anstey & Bull, 2006). A "students' literacy identity includes social and cultural resources, technological experience, and all previous life experiences, as well as specific literacy knowledge and experience"; therefore, a student's literacy identity plays a key role in whether or not a student is multiliterate (Anstey & Bull, 2006, p. 35). Both a student's "lifeworld" and school world experiences are a part of making up a student's literacy identity that they rely on to find meaning (Anstey & Bull, 2006). Because of this, it is increasingly important that teachers allow and help students to use their literacy identity when interacting with different types of texts as a starting point for meaning making (Anstey & Bull, 2006). It should be noted,

however, that each individual is unique in his or her own way, and brings a different blend of cultural experiences and background knowledge (Kalantzis & Cope, 2004); therefore, the way a text is interpreted by one individual might be different from another individual and it might even be interpreted differently by the same individual on a different date or time (Anstey & Bull, 2006). According to Anstey and Bull (2006), this requires a multiliterate person to "approach literacy as a problem solving activity that involves analyzing the context and purpose of the task" while also being a "strategic thinker, that is, an active and informed citizen" (pp. 42/23).

When dealing with multiliteracies, students should use their literacy identity and prior experiences to look for intertextuality within the text. This includes all types of text, from written to visual to live texts. Intertextuality is "the ways one text might draw on or resemble the characteristics of another, causing the consumer of the text to make links between them" (Anstey & Bull, 2006, p.30). This allows students to make a connection with the work as it relates to their prior knowledge and experiences. According to Anstey and Bull (2006), intertextuality and the ability to make these connections is an important part of multiliteracies.

Another important area of multiliteracies is that students be critically literate. Being critically literate is defined as "having the ability to analyze texts, identify their origins and authenticity, and understand how they have been constructed in order to perceive their gaps, silences, and biases" (Anstey & Bull, 2006, p. 23). This allows students to be educated in all areas before taking any action, while also allowing students to develop many skills needed in order to function in their "lifeworld" now and in the future (Anstey & Bull, 2006; New London Group, 1996). Ultimately, this is a good

skill for students to possess and can be beneficial in multiple areas beyond their school life.

In the end, the concept of multiliteracies and creating multiliterate students should be a main goal of educators. With the ever-changing nature of technology, "it is impossible to predict the knowledge the students will need in the future. However, it is possible to teach them basic knowledge, strategies, attitudes, and behaviors that will enable them to deal with evolving texts" (Anstey & Bull, 2006, p. 33). This ever changing media is changing the way we communicate; therefore, there is no one perfect way of teaching literacy but rather educators need to incorporate an eclectic group of literacies within their classroom to make multiliterate students (New London Group, 1996). By addressing these issues, "the concept of multiliteracies attempts to address both the defining of literacy and the implications of the practices needed for the many and varied contexts of a 21st century life" (Anstey & Bull, 2006, p. 20).

21st Century Skills

In addition to challenging students and building different types of literacy, digital storytelling provides students with the opportunity to work with and develop 21st century skills (Czarnecki, 2009; Gakhar & Thompson, 2007; Malita & Martin, 2010; Moore-Hart, 2008; Robin, 2008). Twenty-first century skills have recently received a great deal of attention in education, and digital storytelling is an avenue for students to actively obtain these skills (Robin, 2008). In 2007, The International Society for Technology in Education (ISTE) created the National educational Technology Standards and Performance Indicators for Students (NETS*S). The authors of these standards acknowledged that "students need skills in the following areas: (1) Creativity and Innovation; (2) Communication and Collaboration; (3) Research and Information

Fluency; (4) Critical Thinking, Problem Solving, and Decision Making; (5) Digital Citizenship; and (6) Technology Operations and Concepts" (Larson & Miller, 2011, p. 121). Furthermore, the Partnership for 21st Century Skills (2009) challenged teachers to reflect on whether or not their students were working beyond the content to develop new skills to become: (a) critical thinkers, (b) problem solvers, (c) good communicators, (d) good collaborators, (e) information and technology literate, (f) flexible and adaptable, (g) innovative and creative, (h) globally competent, and (i) financially literate. Czarnecki (2009) and Dogan and Robin (2008) suggested that digital storytelling provides an opportunity for students to acquire many of the skills that students are expected to possess in the 21st century.

Specifically, digital storytelling provides an opportunity for students to create and produce creatively (Robin, 2008). According to Resnick (2002), creativity is important now more than ever before, and new technologies are affording opportunities for students to think and work creatively in the classroom. Recent reports have identified synthesis, creativity, play, and passion as several of the most influential factors in a student's success, both personally and professionally (Gakhar & Thompson, 2007). Skouge and Rao (2009) stated "humans work to acquire skills; they play to express creativity" (p. 59), and digital storytelling provides opportunities for both work and play throughout the process (Garcia & Rossiter, 2010). At the end of a digital storytelling unit, Sadik (2008) found that students had creatively used the technological tools to enhance their final presentations. Similarly, Sweeder (2008) observed that creativity was present in many forms throughout the digital storytelling process.

Digital storytelling promotes collaboration among students, which helps students develop personality and creativity (Kieler, 2010). Sadik (2008) indicated that students were willing to share and work together throughout the story writing process. Warschauer et al. (2010) witnessed similar results in their study in which students shared and worked with each other and developed a strong sense of ownership. Ohler (2009) asserted that this sharing helps to create a community of learners. Students who work cooperatively during the story writing process found that it provided inspiration, feedback, and enjoyment to the process and encouraged them to try new things (Robin, 2006; Sadik, 2008; Thesen & Kara-Soteriou, 2011). This cooperative community among students creates a mutual respect among learners. According to Keiler (2010) individuals who are able to effectively manage other people's feelings are able to benefit from this skill throughout life. Through digital storytelling and project-based learning, students learn the importance of collaboration and compromise (Anderson, 2010; Percy, 2003). Furthermore, Leu and Kinzer (2000) insisted that, "we need to support the development of effective collaboration and communication skills if we wish to prepare children for their futures in a workplace where these skills are so important" (p. 111). McDrury and Alterio (2001) noted that when students begin to share their stories with each other, they understand and begin to make meaning of past events, which also helps them prepare for future situations.

Deep Learning Tool

In addition to connecting students to one another, digital storytelling connects students with course content (Kieler, 2010). It offers students the tools they need to succeed both in and out of the classroom, while making a connection between what they do at home and at school; therefore, it brings new literacies into the classroom

(Thesen & Kara-Soteriou, 2011). Multiple researchers have suggested that digital storytelling gives students a voice (Benmayor, 2008; Rule, 2010; Sylvester & Greenidge, 2009), and they "become active participants rather than passive consumers in a society saturated with media" (Ohler, 2005, p. 47). Harris (2007) discovered that digital storytelling made social studies content come alive while also making it meaningful. Furthermore, this connection helps make the content become more relevant to the students' lives, thus, making it more significant to the students (Thesen & Kara-Soteriou, 2011).

As a form of project-based learning, digital storytelling promotes student comprehension and understanding, as students are working directly with the content instead of passively taking in information (Downing, Kwong, Chan, Lam, & Downling, 2009; Percy, 2003). This hands-on approach to learning allows students to see immediate results and receive constant feedback, which promotes deeper understanding of the content (Anderson, 2010; Eskrootchi & Oskrochi, 2010; Gakhar & Thompson, 2007). As students work with the project, they discover new knowledge through questioning and exploring which helps them bridge new knowledge with prior knowledge (Anderson, 2010; Carr & Jitendra, 2000, Percy, 2003). As stated in cognitive theory of multimedia learning, students organize and filter new information based on their level of prior knowledge (Mayer, 1997). Project-based learning provides students with an opportunity to improve higher order thinking skills like problem solving, self-monitoring and expression (Blumenfeld et al., 1991; Kieler, 2010; Malita & Martin, 2010; Mitchell et al., 2009; Percy, 2003). Garcia and Rossiter (2010) noted that because

of these opportunities, project-based learning also provides students with an opportunity to gain valuable self-understanding.

Kieler (2010) identified digital storytelling as a “deep learning tool” that promotes lifelong learning (p. 50). In order to complete a well-written script, students must possess a deep understanding of the content (Roby, 2010). Further, digital storytelling can bring to light what students comprehend or fail to comprehend (Thesen & Kara-Soteriou, 2011). Sadik (2008) observed that students not only thought deeply about the topic but also worked hard to create a story that communicated what they knew. According to Robin (2008), the combination of visual images and written text benefits student comprehension. Digital storytelling is a powerful tool that combines both of these elements.

Students who work with digital storytelling do not just express the facts and details from the content, but rather they are engaged in the content and reflect throughout the process (Sadik, 2008). Borneman and Gibson (2011) indicated that students analyze both the auditory and visual content throughout the digital storytelling process. The combination of visual and auditory cues helps students comprehend more complex information (Carr & Jitendra, 2000; EDUCAUSE Learning Initiative, 2007). Students must use higher order thinking skills to convey their thoughts and understanding through physical depictions and the written word (Gakhar & Thompson, 2007; Heo, 2011). Sadik (2008) reported that teachers found digital storytelling fosters understanding while increasing students’ technology and communication skills. Czarnecki (2009) found similar results with improved student communication. According to Skouge and Rao (2009), students are proud of what they have

accomplished at the end of the unit. They have a certain ownership of the process and their product; therefore, the learning that occurs throughout the unit becomes more important to the student (Li & Morehead, 2006). Gregory et al. (2009) noted that students who work with digital storytelling have earned higher grades in addition to showing signs of improved computer skills.

Best Practices of Digital Storytelling

There are several best practices outline in the literature to help guide teachers through a digital storytelling unit. The use of best practices when designing or developing a lesson utilizes prior experiences and research in order to create the most effective unit possible. Therefore, having a solid understanding of best practices and how to implement them will increase the likelihood of a digital storytelling unit producing the benefits discussed above. Recently, some have used the term best practices interchangeably with the terms scientifically-based practice or evidence-based instruction (Ferri, Gallaher, Connor, 2011). The passing of the No Child Left Behind Act of 2001 brought the idea of evidence-based practice, which is popular in the medical field, to the field of education (Spencer, Detrich, & Slocum, 2012). Assistant Secretary for the Office of Educational Research and Improvement, Grover Whitehurst (2002), defines evidence-based education as, “The integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction.” The literature for best practices in a digital storytelling unit can be divided into sub-categories including: (a) planning, (b) modeling and elements, (c) writing, (d) collecting materials, (e) storyboard and narration, (f) editing, (g) teacher facilitator, (h) sharing, and (i) assessment. Each of these sub-categories is discussed in greater detail within this section.

Planning

Digital storytelling units take time; therefore, proper planning must take priority before the unit is implemented (Moore-Hart, 2008; Sadik, 2008; Sweeder, 2008). Teachers need to plan the unit from beginning to end to address the objectives and introduce students to basic writing skills such as grammar and structure (Sweeder, 2008). Once students have a grasp of the project, they can begin the process by selecting content that is of personal interest to them (Kieler, 2010). Students need to consider whether or not their chosen content will be meaningful to both themselves and to their audience (McLellan, 2006). At this stage, Kieler (2010) suggested that teachers allow students to share and discuss their ideas with one another to encourage interaction among the students and to help build an emotional connection with the material.

During the planning stage teachers must be aware of the time required for proper implementation of digital storytelling (Moore-Hart, 2008). Teachers have indicated that time constraints are a major challenge when implementing digital storytelling and that this should be considered before the unit begins (Sadik, 2008). Dogan and Robin (2008) also found time to be one of the biggest obstacles for teachers in implementing a digital storytelling unit. Based on time constraints, Kieler (2010) realized that she had not given the unit enough time and saw poor results among her students. Prior to implementation, Garcia and Rossiter (2010) suggested that teachers think about what they hope to accomplish with the unit to ensure that it aligns with the time requirements of a digital storytelling unit.

Modeling & Elements

The digital storytelling process can be new to both teachers and students. By modeling new concepts and skills, teachers can help students better understand not only what they are going to be doing, but also what they can do (Bandura, 1977, 1986; Kajder, 2004, Robin & Pierson, 2005). Thesen and Kara-Soteriou (2011) encouraged teachers to model and show examples of digital stories in order to help students understand the many facets of a digital story. According to Bandura's (1977, 1986) social learning theory, students learn through observation and modeling. Robin and Pierson (2005) identified modeling as a successful teaching strategy since it allows students to see before they do, and this strengthens their final products. In addition to modeling, Moore-Hart (2008) and Kieler (2010) suggested that teachers show and discuss with their students good and bad examples of digital storytelling before beginning the unit. While these discussions take time, students can implement what they learned directly into their own projects (Kajder, 2004). Teaching technological skills to a beginner can be difficult (Skouge & Rao, 2009); however, the concept of modeling a task first and learning through observation has proven to be a valuable tool for teachers (Thesen & Kara-Soteriou, 2011).

As previously noted, digital stories can contain many components including voices, music, sound effects, images, and video (Rule, 2010). By modeling these elements first, students can observe how to utilize these new tools and concepts (Moore-Hart, 2008). Garcia and Rossiter (2010) noted that a digital story does not have to contain all of these options. By modeling and reminding students of this, they can get a good understanding of all their creative options. Furthermore, the Center for Digital Storytelling developed seven elements that comprise a digital story to help teachers and

students create effective digital stories (Lambert, 2007). When utilized, these seven elements can help guide a student to creating a powerful digital story. The Center for Digital Storytelling's seven elements of a digital story are as follows (Lambert, 2007):

- point of view;
- a dramatic question;
- emotional;
- the gift of your voice;
- the power of the soundtrack;
- economy;
- pacing.

Introducing these elements to the students before the process begins allows students to process the information and implement them into their own projects.

Writing

While the digital elements are an important aspect of digital storytelling, it is vital that students first focus on writing their story (Kieler, 2010). Technology can be a useful way for students to develop new skills and to engage with the material and with one another. However, the script needs to be the main focus (Gakhar & Thompson, 2007). Based on multiple sources, a well-developed script is the most important aspect of a good digital story (EDUCAUSE Learning Initiative, 2007; Gakhar & Thompson, 2007; Kieler, 2010). In fact, Borneman and Gibson (2011) suggested that students use the 80/20 rule in which, "80% of the project involves writing and editing; 20% includes applying the technology" (p. 17). In a digital storytelling unit, it is critical that students begin writing before they are presented with the technology (Mullen & Wedwick, 2008; Sylvester & Greenidge, 2009). Strong writing helps student stories come alive without relying solely on the technology (EDUCAUSE Learning Initiative, 2007).

As students are writing their scripts, they should be collaborating together and working with their teacher facilitator. Kieler (2010) proposed that the story should answer a dramatic question and suggested the use of collaboration to help writers refine this element of their story. Additionally, Roby (2010) advised that teachers support students by asking pertinent and thought-provoking questions. Teachers can also use short individual meetings during this time to check on student progress (Kearney, 2011). As students are writing, they should use short, positive sentences to portray the elements in their story (Grady, 2010). Lambert (2007) suggested that students limit their stories to between 250 and 375 words. However, stories may need to be longer in order to fulfill unit objectives. In any event, students need to find a point of view and maintain that point of view throughout the story (Kieler, 2010).

Ohler (2005) noted that story mapping during the writing stage has several uses and benefits. The author described a story map as "a one-page diagram showing how the essential components of the story are incorporated into the overall flow of the narrative" (p. 45). Story maps allow both the teacher and student to see the various parts of the story to ensure that it is both logical and fluid. Story mapping can also help students develop a strong visual depiction of the characters and think about the theme of their story. A story map is a valuable tool for teachers as it provides an artifact that teachers can quickly assess to provide immediate feedback to students. Finally, Ohler (2005) asserted that, "a story map is not a box that a story needs to fit into, but a flexible guide aimed to help storytellers understand their stories and tell them in compelling, memorable ways" (p. 46).

Collecting Materials

Once the stories are complete, students will begin to collect the media they are going to utilize in their digital story (Kajder, 2004). As students select images, they should not simply show a visual of what is being discussed. Rather, their image selection should consist of appropriate images that expand on the message of their story, and go beyond a simple representation of the words (Johnson, 2009; Kearney, 2011). Roby (2010) identified this stage of the process as an appropriate time to introduce copyright rules to students, since most images found on the Internet are copyrighted. Kearney (2011) and Robin (2006) suggested the use of copyright-free media that can either be created by the students or found using an archive of public domain images. Regardless of the source, all images should be given credit. Sylvester and Greenidge (2009) recommended the end credits as a good place to display this information.

These same deliberate choices should be utilized when selecting the music or sound effects that will be used behind the narration (Kearney, 2011). Appropriate music is vital to a good digital story because it helps to set the mood and evoke emotions through tempo and style (EDUCAUSE Learning Initiative, 2007; Roby, 2010). Consistent with image selection, students should select music that complements their story.

Storyboard and Narration

Much like a paper outline, a storyboard can be used to plan out the various elements of a digital story (Fredricks, 2009). Storyboarding is a process in which students lay out “each image, technique, and element of their story” (Kajder, 2004, p. 66). Similar to story mapping, storyboarding helps students place their media in a

logical order and look for existing gaps and areas that need to be rearranged (Fredricks, 2009; Sylvester & Greenidge, 2009). Storyboarding requires that students think both visually and creatively (Sweeder, 2008). Therefore, storyboards are helpful as students begin to blend the visual and auditory elements of their stories (Chung, 2007).

Upon completion of the storyboard, students should rehearse and record their narration. According to Sylvester and Greenidge (2009), story delivery should reflect both power and emotion. Students should work to perform their stories while recording this narration so that it does not sound too rehearsed. This will allow "the audience to hear the personal content and emotion inflected in the voice" (pp. 287-290). Once all of these tasks have been completed, students are finally ready to combine the various elements of their digital story.

Editing

The editing phase is when all of the previously created and collected components are put together. The first step of the editing process is to import all of the elements for the digital story into the selected editing software (Chung, 2007). Elements may include pictures, videos, music, sound effects, and student narration (Rule, 2010). Once all of the elements are loaded into the software, students can begin to experiment with the many creative choices that each software program provides.

The editing stage can be the most exciting aspect of the process for students and the most disconcerting one for teachers. Teachers may be anxious because they are not familiar with the editing software or the options available to them. There are several free editing programs that can be used to create digital stories, like Windows Movie Maker or Macintosh iMovie that come pre-loaded on many computers (Sylvester & Greenidge, 2009; Gregory et al., 2009). Thesen and Kara-Soteriou (2011) further

recommended Photo Story as an effective and free tool. The use of additional resources, like online tutorials and instructional YouTube videos, can help both teachers and students throughout the digital storytelling process (Mullen & Wedwick, 2008). Teachers who are not familiar with the various editing programs can take advantage of these resources before beginning a digital storytelling unit.

Teacher Facilitation

Teachers can create authentic learning situations by serving as facilitators, shifting the focus from teacher to student. It is important, therefore, to create a learning environment that supports active student involvement while still providing adequate feedback and support to help guide the student through the process. Cook and Weiland (2010) suggested beginning with an activity that relates the new content to the students' prior knowledge and builds a framework for the student to refer back to throughout the process. Students can use this base to explore the content and build new knowledge that supplements their previous knowledge. At this time, teachers should work with students to help guide them toward unit objectives.

During this process, the teacher must become a facilitator and allow students to learn through discovering new knowledge on their own (Anderson, 2010; Cook & Weiland, 2010; Percy, 2003). Students learn by doing which allows them to solve their own problems and manage issues that arise (Nation, 2008). Students actively participate in their own learning, making the shift from a classroom in which the teacher disseminates knowledge to one in which students are empowered. In this model, the teacher works as a guide and companion in the learning process (Carr & Jitendra, 2000; Resnick, 2002). This creates a student-centered classroom in which students are engaged in activities that make learning meaningful and individualized (Churchill et al.,

2008; Warschauer et al., 2010). These meaningful tasks are essential in helping students connect the content to their personal experiences and to navigate their own journey (Cook & Weiland, 2010; Griffiths et al., 2007).

Trauth-Nare and Buck (2011) warned that student-centered classrooms may make it easier for teachers to not give ample feedback or provide the support students need to work with higher-order thinking skills. Therefore, proper and continuous feedback is required in a project-based unit to help student's progress toward the end goal (Trauth-Nare & Buck, 2011). Trauth-Nare and Buck (2011) stated that proper feedback should be both positive and detailed to help students meet predetermined benchmarks and essential outcomes.

Sharing

Once students have finalized their products, their final videos are ready to be submitted and screened (Kajder, 2004; Sweeder, 2008). Sharing one's work with the whole class can be intimidating for some students; however, student collaboration throughout the process should help establish unity and trust among the students (Benmayor, 2008). Sharing can present a good opportunity for students to provide feedback and suggestions to their peers in a safe and supportive environment (Kajder, 2004). With the addition of the read/write web, students can now share their stories with the world (Borneman & Gibson, 2011; Chung, 2007; Meadows, 2003). Skouge and Rao (2009) have suggested that students take pride in their stories by sharing them with this potential worldwide audience. Further, the read/write web "promotes the writer's awareness of audience, purpose, and form, an awareness not always demonstrated by less capable writers" (Sylvester & Greenidge, 2009, p. 291). Finally, Karchmer (2001) observed that student motivation increased when they knew that their work was going to

be published on the web. Yet, teachers should be aware of district policies before publishing any student work to the Internet (Sylvester & Greenidge, 2009).

Assessment

Assessment of digital stories can be difficult for teachers since traditional assessment methods might not fully assess students' deep understanding (Sadik, 2008). Even with new assessments, teachers need to ensure that they place priority on content assessment as compared to technology assessment (Borneman & Gibson, 2011). Trauth-Nare and Buck (2011) suggested that teachers use formative assessment throughout the project to keep students focused on the end goal. As defined by Black and Wiliam (1998), formative assessments can help shape the teaching and learning process. In order for formative assessments to be effective, teachers must provide students with feedback that helps to shape their learning and moves them towards the objectives of the unit. Johnson (2009) suggested that teachers utilize rubrics to evaluate students' final products. Chung (2007), however, asserted that students need to be aware of the instructor's expectations from the outset. By sharing expectations upfront, students can be mindful of these elements throughout the process and produce more effective and complete digital stories. A detailed rubric can be a valuable tool for both teachers and students in a digital storytelling unit. Sample rubrics are available to teachers through the Center for Digital Storytelling website.

Implementation of Digital Storytelling

There are several factors that determine whether or not a teacher will implement a digital storytelling unit. According to Abbitt and Klett (2007), teacher efficacy with technology is a major determinant to implementing a digital storytelling unit. Teachers

may be unsure about their own technology skills, and therefore hesitant to implement technology into their curriculum. Ongoing professional development and teacher support are vital to the implementation of any technology-based unit, specifically a digital storytelling unit (Dogan & Robin, 2008; Pianfetti, 2001; Sadik, 2008). Once digital storytelling has been selected, teachers can begin the process of implementing it directly into their curriculum. To facilitate this process, Ohler (2008) devised a series of phases and steps to implement a digital storytelling unit. The different factors and the step-by-step process are discussed within this section.

Factors

Teacher technology efficacy has been shown to be a main factor in whether or not technology integration is successful (Abbitt & Klett, 2007). Heo (2011) described teacher technology self-efficacy as how a teacher views his or her ability to use technology in the classroom. In order for teachers to integrate digital storytelling, they must view technology as an asset and be comfortable using it in the teaching and learning process (Hew & Brush, 2007). Multiple researchers have identified that some teachers believe technology integration is too difficult or time consuming (Brzycki & Dudt, 2005; Hew & Brush, 2007). Further, there are teachers who have suggested that effective implementation of technology in the schools is too involved to accomplish (Sadik, 2008). Hew and Brush (2007) argued that this resistance is due to a lack of proper training in technology. As previously mentioned, teachers need ongoing and continuous professional development to help them become comfortable with properly integrating technology into their curriculum (Dogan & Robin, 2008; Sadik, 2008). Eastburn (2008) established that ongoing professional development had a positive effect on both teacher and student outcomes. In addition to professional development,

quality and ongoing technical and curriculum support is crucial to teachers' success and their willingness to implement technology (Dogan & Robin, 2008; Margerum-Leys & Marx, 2002; Vannatta & O'Bannon, 2002; Windschitl & Sahl, 2002). Ohler (2009) indicated that the benefits of technology were significant enough to support ongoing training and support for teachers.

Steps

Kajder (2004) outlined a six-step process for creating a digital story that provides specific details from start to finish. Churchill et al. (2008) and Gakhar and Thompson (2007) both stated that a digital storytelling unit can be implemented through planning, production, and presentation. Regardless of the number of steps or how they are titled, the process for creating a digital story is fairly consistent throughout the literature.

In his book, *Digital Storytelling in the Classroom: New Media Pathways to Literacy, Learning, and Creativity*, Ohler (2008) divided the digital storytelling process into five phases. His phases take the student from planning, through the three production stages, to the presentation and sharing phase. Ohler (2008) puts an emphasis on mapping out the entire story during the planning phase and completing a storyboard as a visual outline before entering the three phases of production where students will gather their elements, edit them together, and complete their final digital story. After students have fully completed their digital stories, they are then able to share their stories with their class, community and even the world (Ohler, 2008).

Summary

Digital storytelling and project-based learning offer clear and compelling benefits to the field of education. As stated in this review, both are proven methods for increasing student engagement and motivation. Additionally, digital storytelling is an

approach that appeals to students in ways that engage them with the curriculum. As student interest grows within a digital storytelling unit, students become connected to the content and develop a sense of ownership that makes the learning meaningful. Further, students learn knowledge and skills in these authentic learning environments that they can use far beyond the walls of their classrooms. All of these support the notion of new literacies in the classroom. Research on digital storytelling is limited. The majority of the literature is based on the primary and higher education levels, leaving a void at the high school level. Additionally, the literature is highly anecdotal with most of it being presented as a teacher's account of a digital storytelling unit. There is a need for more research-driven literature that critically examines all aspects of digital storytelling. Furthermore, content specific research needs to be conducted as digital storytelling becomes more prevalent in all types of classrooms.

By using digital storytelling as a means of project-based learning, teachers can engage students in authentic learning while also focusing on writing and technology skills which are both important when discussing new literacies. Digital storytelling can be beneficial as a stand-alone unit. However, by implementing digital storytelling as a form of project-based learning students can reap the benefits of both digital storytelling and project-based learning while acquiring many of the skills necessary for success in today's society. In order to properly employ a digital storytelling unit, teachers need to have a comprehensive understanding of project-based learning since it provides the foundation for digital storytelling.

The decreasing costs of technology have made digital storytelling accessible now more than ever. Digital storytelling may be the format teachers need to teach both

content and the skills students need for the 21st century; however, more rigorous research is needed before this claim can be made.

In order for technology integration and digital storytelling to be successful, teachers need continuous support and professional development to develop the skills necessary to successfully integrate technology into their classrooms. While technology is a key element in digital storytelling, the writing process must come first for in order for the digital story to succeed. Digital storytelling units take time; teachers must be willing and able to model the desired skills and outcomes for their students throughout the process. Despite the time required, the benefits of a digital storytelling unit can be significant both in the classroom and in students' everyday lives.

CHAPTER 3
METHODS

This chapter describes the design, implementation, and evaluation methods used in this study. The chapter begins with a description of the study, followed by an instructional summary, participants, and setting. The chapter concludes with an overview of data collection and analysis methods.

Pilot Study

A pilot study on digital storytelling was implemented during the fall semester of the 2011-2012 school year. This pilot study implemented the best practices of instructional design at the secondary level in order to evaluate digital storytelling. Based on this model, an instructional design framework was used. Elements of this framework included analysis, design, development, implementation, and evaluation. This framework incorporated the Morrison, Ross, and Kemp (2010) model based on its classroom focus. The pilot study was implemented prior to the current study due to a lack of research on digital storytelling at the secondary level.

This pilot focused on student motivation and engagement, content and writing objectives, and perceptions and implementation of digital storytelling at the secondary level. Data were collected through observations and student and teacher focus group interviews. Data were analyzed using the Spradley's (1979) constant-comparative method looking for common themes. Results were consistent with findings from previous studies on digital storytelling at the primary and higher education levels within the literature. Additionally, the pilot revealed that students were more motivated and engaged when digital storytelling was used consistent with research outside of the secondary classroom. The following themes were derived from pilot study data:

- Beneficial to student motivation and participation;
- beneficial to student engagement;
- beneficial to student content knowledge and writing skills;
- beneficial to student creativity and collaboration;

Based on the findings of the pilot study, I determined that digital storytelling could be an effective tool for secondary teachers. As previously noted, digital storytelling requires time and planning, but the benefits have been shown for all involved. Participating teachers were pleased with the results and expressed an interest in implementing digital storytelling in future academic years. However, the pilot study did not look directly at new literacies or academic outcomes. Although the broad nature of the pilot study provided positive results Common Core requires new literacies be covered within the classroom while still meeting academic objectives. Therefore, the current study was implemented to look digital storytelling and student learning outcomes and new literacies.

Context

This digital storytelling project was implemented in two senior English 12 classes in a public Alabama high school. Faculty and staff in this school are dedicated to helping each student reach his or her unique potential, and the community is involved and supportive. For the purpose of confidentiality, the pseudonym “Mary” was used for the participating teacher. The English 12 classrooms were populated by 10 to 15 students who were diverse with a mix of gender, race, and academic levels. Despite this diversity, the small community school fosters an environment of familiarity between students and teachers. Administrators are supportive of the school’s mission to help each student reach his or her unique potential, and therefore were supportive of digital

storytelling as a new way to engage learners. All of the classes were structured in a traditional style, with desks in rows facing toward the board. Additionally, all of the classrooms were equipped with an AV package, including: a projector, screen, digital presenter, DVD player, and computer station.

Participants

Participants within the study included high functioning academic students as well as students with learning disabilities. Due to the school's relatively high number of students taking AP English during their senior year, the students populating the regular English 12 courses tended to perform lower academically or lack academic drive. Student participants were either 17 or 18 years old and had varying levels of proficiency with writing and technology skills. The majority of students had no experience with video production or digital storytelling. Study participants represented a convenience sample, and included students from the two English 12 courses taught by Mary. Students were informed of their ability to opt out of the study, and no financial- or school-based rewards were given for participation. Although all students were required to participate in the digital storytelling unit, students were not required to participate in the research study. No incentives were used to convince or coerce students to participate.

The teacher, Mary, who participated in this current study, had participated in the pilot study as well. Mary indicated that she was pleased with the pilot study results; therefore, she wanted digital storytelling to be the main focus of the current unit. Specifically, the teacher noted how well digital storytelling integrated into many of the new College and Career Ready standards, like being able to work with multiple types of

text for a larger audience. Thus, the focus of digital storytelling shifted from engagement to academic outcomes and new literacies.

At the time of this study, Mary had been teaching for 16 years, and this was her eighth year at this current school. She expressed a willingness to try new and innovative lessons and was excited about implementing digital storytelling in her classroom. Her only prior experience with digital storytelling was the aforementioned pilot study, in which I covered the majority of the technical aspects of the unit. In this current academic year Mary was eager to assume more of the technical instruction during the unit. She was comfortable with technology; however, she had had no experience with photo or video editing software.

Project

The specific project guidelines implemented for this study were created to meet course objectives, with modifications based on the results of the pilot study. For example, students created “This I Believe” essays instead of working with medieval literature. Although students still completed digital stories implemented through best practices found in research, their topics were new. “This I Believe” is an international organization that promotes writing about personal core values and provides a mechanism for students to share their writing. Students addressed topics that were important to them based on their own personal experiences. Therefore, students were to write an essay describing real events from their lives, and then expand on those events and how they led them to develop a core belief that guides their life today. This required students to work with personal feelings rather than beliefs that may have been

passed on to them from a family member or peers. The essay was personal and required students to write succinctly with specific and powerful examples.

Additionally, due to the personal nature of the writing, students worked individually on their essays and digital stories. Students wrote and revised their own scripts and created a visual outline in the form of a storyboard. Students created their final product in the form of a digital story or short movie using music, images, sound effects, and narration. To create digital stories students used personal technology devices or school-provided iPads with iMovie and Toontastic applications pre-downloaded.

Instructional Overview of Current Study

Based on the results of the pilot study, the original instructional design was revised to focus on new literacies and academic outcomes, as compared to student engagement, while still fulfilling the unit objectives. Mary and I created the new project guidelines and revisions in three formal planning sessions and several informal individual planning discussions. Although the specific essays that the students were writing had changed, the current unit still implemented the same best practices based on the literature.

As previously mentioned, the new state standards require teachers to produce college and career ready students who can work with a variety of texts. In order to help meet these standards, a unit with a digital storytelling component was created. The unit objectives required students to research their future plans, while working with both traditional and new literacies.

Previous research on digital storytelling revealed that inadequate project time frequently leads to poor results (Kieler, 2010); therefore, two weeks were allotted for the

project to provide enough time for students to create quality products. Mary selected this timeframe based on her previous experiences and knowledge of the time students would need to complete the research and writing. A week and a half was devoted to research, writing, and revising. As suggested by Sadik (2008), additional time was provided for students to compile their digital stories which made this a two week project. Since the pilot study revealed students' tendencies to procrastinate, more definitive due dates within the two week period were implemented. To further help Mary and the students, the unit was divided into four parts: pre-writing, writing, post-writing/editing, and assessment.

During these four stages students brainstormed their ideas about major events in their lives that lead to a realization or change in how they believed. The students then took these ideas to create a rough draft and received feedback from both other students and the teacher. After initial revisions on their rough draft were completed students began to gather photos that would be editing into their digital stories along with music and recorded narration. The revision process was a continuous process as students made necessary changes throughout the writing and post-writing/editing phase. Once students had completed their final digital stories and made their final revisions they submitted their digital component and a final draft of their essay to the teacher and presented them to the class. Each phase is discussed in greater detail below.

Pre-Writing

Several new concepts and technology were introduced within the unit; therefore, teacher modeling was used to help guide students toward desired outcomes. Most of the teacher modeling was conducted at the beginning of the unit to guide students through the project and to help get them started on the process.

Before students began to write their digital stories, they recorded significant events in their lives. Based on these events, students picked one to examine in more depth. This brainstorming became the foundation of their "This I Believe" essay. Further, students examined these real life experiences to determine how they influenced a personal belief in their lives. Students used this belief to create a framework for their essay and created a sequence of events that lead to this realization. Each story was real, and stories were used to support their "This I Believe" statement. Once students had created a rough outline of their stories, they moved on to the writing stage.

In order to help the students make this connection, they were encouraged to take the belief out of their thought process at first and focus on important events from their lives. Mary used this technique based on the first guideline of a "This I Believe" essay, which, according to the "This I Believe" website, is to tell a story. The "This I Believe" organization encourages writers to think of a story first and then consider what lesson they learned from that personal experience. Therefore, the students' narratives consisted of a string of events from their lives that lead to their chosen belief instead of the contrary. It is this sequence of events that lends itself to creating a storyboard and script from the students' story and translates well into a final product or movie. Students wrote personal essays that recounted real events from their life. They described these events in a narrative and then drew upon that narrative to create a conclusion about how it affected their personal belief system. Thus, due to the personal nature and narrative form of writing, this project is ideally suited for digital storytelling.

Writing

I devoted to writing. According to the EDUCAUSE Learning Initiative (2007), the script or story is the most important element of a good digital story. This timing was also chosen in an effort to follow the 80/20 rule by Borneman and Gibson (2011), in which "80% of the project involves writing and editing; 20% includes applying the technology" (p. 17). During this writing period, Mary used formative assessments to monitor student progress and provide help and guidance as needed (Kearney, 2011; Trauth-Nare & Buck, 2011). As defined by Black and Wiliam (1998), formative assessments are used to help shape the teaching and learning process. Furthermore, students completed rough drafts as official "check-ins" that allowed Mary to assess student progress and make formal recommendations. Rough drafts were submitted through the school's learning management system which allowed Mary to provide immediate feedback on each draft that the students could refer back to while writing.

Post-Writing

Once scripts or written narratives were completed, students created storyboards to visually outline their digital stories. Storyboarding is a process in which students lay out "each image, technique, and element of their story" (Kajder, 2004, p. 66). A storyboard template, Created by Porter (n.d.), was used by students to lay out the visual and auditory elements of their stories (Appendix A). Students were also encouraged to revise and edit their stories one last time during this stage to ensure that they were ready to be recorded (Kajder, 2004).

After the storyboards were completed, students were introduced to the technology involved in creating their final products. It should be noted that the technology was intentionally not introduced to students prior to this point because Mary

wanted to minimize distractions during the writing process. Additionally, Mary did not want the technological aspects of students' digital stories to overshadow the writing (EDUCAUSE Learning Initiative, 2007; Sylvester & Greenidge, 2009). Students were provided a brief overview of the software in a whole group setting, and specific questions were answered individually following the presentation. Technical assistance was offered to help students move smoothly through the editing process; however, students were encouraged to explore and solve problems on their own. Mary served as a facilitator providing quick check-ups and guidance to ensure that students were progressing.

Once the digital stories were completed the students presented their essays to the class. At the conclusion of each presentation, other students and guest teachers provided feedback. This feedback provided a final opportunity for students to fine tune their essays, before given the option to submit their essays to the "This I Believe" website. This opportunity to share their work with the world provided students with a real world connection to the project and an authentic learning opportunity that fostered ownership and personal accomplishments (Heo, 2011; Robin, 2008).

Assessment

Both formative and summative assessments were used to ensure that students were progressing toward the final objectives. As previously mentioned, formative assessments are assessments *for* learning, while summative assessments are assessments *of* learning (Black & Wiliam, 1998). To inform students of her expectations (Chung, 2007), Mary distributed an assessment rubric at the beginning of the project. Mary and I created the rubric (Appendix B) to help students navigate through the project and to provide Mary with a formal grading scale. The rubric was

created based on the literature on new literacies and state standards. Each criteria field of the rubric was selected and developed to specifically assess these elements. A variety of new literacies and standards were assessed in order to fully assess the final products. Furthermore, this information provided data for the study. To create this rubric, two sets of meetings were held with Mary to determine which aspects of the project to include and how to score them by level. These meetings were instrumental in ensuring that all of the important details were included in the rubric. Additionally, these meetings confirmed that both Mary and I followed the same protocol.

Research Questions

This qualitative study explored the academic outcomes and new literacies associated with the use of digital storytelling. For the purpose of this study, academic outcomes were identified by students meeting course and assignment objectives, while new literacies were identified by a student's ability to find, use, and manipulate information in order to communicate (Leu et al., 2004). The overarching focus for this study was to identify the academic outcomes and new literacies evident when implementing digital storytelling at the secondary school level. In order to analyze these, the following research questions were answered.

1. In what ways, if any, are new literacies evident during a digital storytelling unit within an English 12 classroom?
2. In what ways, if any, do students meet English 12 objectives related to the writing and language standards during a digital storytelling unit?

Research Design

Qualitative research is a common practice within the field of education. According to Merriam (1998), qualitative research is a form of inquiry that "focuses on meaningful context" (p. 1). There are many forms of qualitative research, but they all

seek to describe, explain, and/or understand a new concept (Anderson, 1990; Sherman & Webb, 1990). Furthermore, qualitative research involves analyzing a concept or issue in a natural setting by exploring a situation or process directly (Bogdan & Biklen, 1998).

There are many forms of qualitative research. For the purpose of this investigation, a case study approach was selected. Case study research allows the inquiry, "to retain the holistic and meaningful characteristics of real-life events" (Yin, 1994, p. 3). This approach also allows for the case, or the unique factors within the study, to be observed in a natural setting (Stake, 1995). Each case is contained within predetermined boundaries or considerations. Smith (1978) referred to this condition as a *bounded system.* Merriam (1998) described this approach as placing a fence around what is going to be studied. Thus, a case can be a person, a place, a program, a policy, or some other unique situation. For this study, the case was an English 12 classroom. The qualitative case study approach was chosen for this study based on the desire to gather in-depth data from actual classrooms and educational practices (Creswell, 1998; Merriam, 1998, 2001; Stake, 1995).

Fitzpatrick, Sanders, and Worthen (2004) discussed three characteristics of a case study, which include focusing on a specific case, wanting a thorough understanding of an issue, and using multiple methods of data collection. Yin (1984) further delineated case studies into three types: exploratory, descriptive, and explanatory. Exploratory case studies allow the researcher to study a program or concept without having research questions before the studies begins. Rather, it allows the researcher to develop the research questions throughout the process. The goal of

descriptive case studies is to describe what happened through implementation of a new concept or program. Finally, explanatory case studies are used with casual relationships. Based on these definitions, the current study can be considered a descriptive case study.

Data Collection

Data were collected using field notes, observations, and reflections, as well as student artifacts (digital stories) in order to develop an understanding of the academic outcomes and new literacies evident within a digital storytelling unit.

Observations

Process. For this study, I conducted participatory observations (Patton, 1987; Spradley, 1979). Patton (1987) identified six main advantages to observational fieldwork as a form of evaluation during a qualitative study: (a) to understand the context; (b) to reason is inductive in approach; (c) to see things; (d) to gain information about participants or topics that they may not talk about otherwise; (e) to move beyond selective perceptions; and (f) to access personal information, knowledge, and experiences. The decision to conduct participatory observations was made in order to allow for follow up questions directly with students both in the moment and throughout the observations to gain better understanding of what was being observed.

In order for students to view me as part of the class, I frequently attended class before the study began. Once the unit and study began, Mary and the students were accustomed to my presence; thus, they were more likely to act natural fostering trustworthiness and credibility within the study. In order to obtain a complete picture, I took notes of observations throughout the unit. Observations were guided by concepts of new literacies and the research questions on academic outcomes of implementing a

digital storytelling unit (Hagood, 2009; Leu et al., 2004). The literature and standards were used to create an observation protocol (Appendix C). Therefore, observations of student behavior, classroom activities, and conversations were recorded within the observation protocol, which were used to further the understanding of the case.

According to Patton (1987), field notes are "raw data of qualitative observation" (p. 70). Field notes are much more in-depth than casually watching a situation and making notes of what happened. Proper field notes take time to perfect; thus, I practiced taking field notes before the study began. During this time, the observation protocol was revised based on practice observation results.

In the classroom, I sat at a desk in the back of the classroom. I was free to move around the room, and Mary allowed me full access to her classrooms without limitations. Field notes were reviewed, expanded upon, and reflected on at the end of each day to ensure that they were comprehensive and provided a full picture of the case. I made note of what students did and said, while also writing down questions that arose during the class. After each class, I elaborated on these observations while they were still fresh in my mind in order to document the most accurate picture. I also expanded upon what had occurred in the classroom to complete what Bogdan and Biklen (1998) referred to as reflective field notes. All notes were kept in a central location and reviewed throughout the study to search for themes or patterns.

The structure of the field notes followed Patton's (1987) formula which describes field notes as descriptive; containing what people said; including evaluator's feelings, reactions, and reflections; and finally, including observer's insights, interpretations, and initial analysis and/or working hypotheses. A copy of the observation protocol was

always present during my observations to help guide the observations. Multiple drafts of the protocol were tested within the English 12 classroom before the study began.

Data Collection Instrument / Protocol. The observation guide was primarily developed based on the 10 central principles of new literacies and examples of new literacies as outlined by Leu et al. (2004); as well as the three characteristics of new literacies developed by Hagood (2009). In addition, supporting information and ideas from New London Group (1996) and Gee (1996) were utilized. Each criteria related directly back to the literature of new literacies. The 10 central principles according to Leu et al. (2004) are as follows:

1. the Internet and other ICTs are central technologies for literacy within a global community in an information age;
2. the Internet and other ICTs require new literacies to fully access their potential;
3. new literacies are deictic;
4. the relationship between literacy and technology is transactional;
5. new literacies are multiple in nature;
6. critical literacies are central to the new literacies;
7. new forms of strategic knowledge are central to the new literacies;
8. speed counts in important ways within the new literacies;
9. learning often is socially constructed within new literacies;
10. teachers become more important, though their roles change, within new literacy classrooms.

Hagood (2009) described the three characteristics of new literacies as follows:

1. Multimodal in nature, including linguistic, visual, gestural, and auditory texts semantic systems;
2. Situated social practices, which are culturally, linguistically, and textually based;
3. Identities, which connect text users to text uses.

I created the observation protocol based on these principles and characteristics to help guide my observations. Each category was created to reflect priorities in the literature regarding new literacies and to ensure that all areas of new literacies were being observed. Table 3-1, located at the end of the chapter, depicts each category of the observation protocol, rule for inclusion for that category (Maykut & Morehouse, 1994), and the literature on new literacies in which that category was created. Each category was carefully created to provide an understanding of the new literacies that students encounter or do not encounter during a digital storytelling unit. Based on new literacies literature, a series of examples of new literacies practices was compiled and assembled to create the observation protocol below.

Student Reflections

Process. For the school in which the study was conducted, student reflections were a common practice, and teachers often used reflections as a quick check of the unit and to make changes in courses for the following year. Therefore, reflections were a natural source of data. For the purpose of this study, reflections were used to provide Mary with information on the unit as well as data for the study. Reflections also provided students an opportunity to explain their thought processes for their choices of images, music, and final products. Due to students' familiarity and comfort level with the reflection process, reflections were used to supplement data received from the observations and final artifacts in the students' own words.

Data Collection Instrument / Protocol. Students were asked to reflect on the project using the following five prompt statements or questions:

1. write about your experience with the digital storytelling project.
2. what were the positive aspects of this unit?

3. what challenges did you face during this unit and how did you overcome them?

4. why did you choose your “This I Believe” topic?

5. why did you make the selections in music and images that you did for your digital story?

These prompt statements and questions were created by Mary and me to provide feedback on the unit and to allow students an opportunity to explain their choices while providing data for the study. Each student completed the reflection process after the unit was completed and wrote their answers on a reflection sheet provided by Mary.

Final Artifacts

Process. Final artifacts were also reviewed as a data source. According to Creswell (1998), within a case study it is important to acquire several forms of data. Students’ final products were important and necessary for developing a rich description of the classrooms because they showed a culmination of the students’ work. The final artifacts were analyzed to support emerging themes and other findings within the study, while also providing data on academic outcomes using state standards and objectives which are discussed in greater detail in the next section. The student artifact rubric (Appendix B) used on the final artifacts was created jointly by Mary and me.

Data Collection Instrument / Protocol. The rubric was based on new literacies literature and the state standards in addition to the specific “This I Believe” format. Each element was selected to fulfill Mary’s goals and objectives for the unit. All “writing” standards associated with narrative writing were addressed as well as the “production and distribution” standards and several “language” standards from the Alabama English 12 course of study. Furthermore, in order to attend to new literacies several elements

were added to the rubric based on the literature. The rubric was revised and tested within the English 12 classroom before the study began.

In order to test and refine the rubric, Mary and I applied the rubric to digital stories from the pilot study to determine if the rubric returned the desired information based on the digital stories specifically and past "This I Believe" essays to test the written piece of the rubric. Based on the results of these tests, the rubric was revised and adjusted in order to gather the data necessary to address the research questions. Each element related directly back to a state standard, new literacies, and/or digital storytelling literature. Table 3-2, located at the end of the chapter, describes the criteria used to design each section of the rubric and includes the standards for reference purposes.

Data Analysis

Data analysis was an ongoing and constant process. According to Merriam (1998), it is common within case study research for data collection and analysis to occur concurrently throughout the study. Data were read and re-read throughout the process, and analyzed using the constant comparative method (Spradley, 1979). Observations and reflections were coded using Spradley's (1979) cultural-domain method "to identify trends and patterns that reappear" throughout the data (Berg & Lune, 2012, p. 187). Analysis of codes was a continuous process. Data with similar codes or characteristics were grouped together. These groups or themes were then reviewed to see how each of them addressed the research questions. Once a code was saturated, common themes were determined and then cross-referenced with one another to determine their impact on student literacy. Codes with little support or less convincing evidence were eliminated.

In order to evaluate the research questions that focused on new literacies and academic outcomes of implementing digital storytelling at the secondary level, data from observations, reflections, and student artifacts were analyzed and divided into categories. The reflection responses and observations were separated on coding sheets. A different coding sheet was created each time a new code or concept presented itself in the data. This process continued until a coding sheet had reached saturation. According to Creswell (2005), saturation is defined as "the point where you have identified the major themes and no new information can add to your list of themes or to the detail for existing themes" (p. 244). Once all the data were analyzed and separated by theme the findings were divided based on the research questions.

Student artifacts were analyzed at the conclusion of the unit. In order to help guide the evaluation of the final product, a rubric was created by me and Mary and used to evaluate student work based on state standards (Appendix B). Each digital story included a written component that was narrated with music and pictures. These digital stories were exported into a movie file and uploaded to YouTube, Google docs, or the school's current learning management system. Each element was reviewed individually and as a whole product for cohesiveness using the criteria established in the rubric. Examples of elements that were evaluated included use of picture movement, transitions, audio quality, music and sound effects, and overall flow of the project, as well as, language, organization, pacing, exposition, and narrative techniques of the written piece that was narrated. These elements relate back to new literacies and the ability to work with multiple types of texts, as well as, the state standards for writing.

Trustworthiness of Study

The goal of this is study was to identify the academic outcomes and new literacies present during a digital storytelling unit at the secondary level. When referring to a qualitative study, Lincoln and Guba (1985) used the terms trustworthiness, credibility, and transferability instead of the quantitative terms of validity and reliability to establish credibility. However, despite what term is being used each study needs to ensure measures are taken in order to show credibility. Therefore, multiple measures were utilized to ensure trustworthiness, credibility, and transferability of the data.

Prior to the beginning of the study, approval was granted by the Institutional Review Board (IRB) of the Office of Research Compliance (Appendix D). Student participants were able to opt in or opt out of the study by signing an informed consent form (Appendix E). Students were notified that there would be no penalty for not participating and that participation was strictly voluntary. Students who were under the age of 18 also provided parent/guardian approval through a signed parental informed consent form (Appendix F). Mary also signed an informed consent form before participating in the study. All participants were ensured that their data would be confidential and pseudonyms were used in order to further protect their privacy. In addition, approval was granted by the local school system in which the study took place.

Credibility

In order to further establish credibility and trustworthiness of the study, several additional steps were taken. I spent a great deal of time with the participants in the classroom in order to build trust and to confirm that my observations were consistent. By spending extended periods of time in the field, I was able to learn the culture of the classroom and confirm data that were used in the study (Lincoln & Guba, 1985).

Triangulation was another method I used to establish credibility within this qualitative study (Creswell, 1998; Stake, 1995; Yin, 2003). Triangulation is the use of multiple sources in order to fully develop and support findings within a qualitative study (Yin, 2003). By using multiple sources to support a concept I was able to fully support the findings of the study because the findings reached beyond one person or instance. In order to achieve triangulation in this study, I utilized observations, reflections, and student artifacts as well as multiple participants.

Transferability

Transferability refers to the finding's ability to be applied in other contexts or transferred to other settings. Due to the nature of qualitative research, it is less imperative to establish transferability than it is within quantitative research; however, it is still important that measures be taken to help others understand the process, implementation, and methods by providing thick descriptions (Krefting, 1991; Rudestam & Newton, 2007). Therefore, detailed descriptions about the study were developed and provided for others to review and determine if the findings could be generalized within other contexts.

Dependability

Dependability is related to the ability to reproduce the findings. A common strategy to achieve dependability is to provide rich descriptions of the study (Rudestam & Newton, 2007). Therefore, this chapter provided thick descriptions of the research methods, data collection, analysis, and study implementation. These descriptions were reviewed by peers to ensure the narrative of the study could be followed and understood by an outside reader.

Limitations

Limitations are present in all studies and may impact the ability to transfer results of the study across other settings and contexts. Although the digital storytelling unit was required for all students within the English 12 course, participation in the study was not required. Therefore, participants in the study were comprised of students who returned parent permission and IRB consent forms within Mary's courses. In addition, students were given the opportunity to opt out of the study; thus, participation was strictly voluntary. These conditions may limit the transferability of findings beyond the students who participated in these two English 12 classes.

Another limitation of case study work is bias. Although bias, according to Mills (2010), is in some form expected, it can be reduced if the researcher acknowledges it throughout the study. Additionally, Stake (1995) identified a limitation of case studies in which respondents supply the answer they think the research wants to hear.

In order to minimize these limitations, I spent time within the classroom before the study in order to make my presence less of a distraction and more of their normal class day. Furthermore, participants were regularly reminded that their answers would be confidential and that their names would not be used. Participants were also informed that their teacher would not be aware of their answers, and they were encouraged to answer truthfully without any worry of academic or personal harm or penalty. Finally, participants were reminded that their data may be helpful to future classrooms.

Therefore, several assumptions were made about the study. The first assumption was that students, teachers, and administrators would be truthful in their answers. The second assumption was that students would conduct themselves in the

same manner as they would if I were not present. Finally, it was assumed that the students who returned their consent forms and participated in the study created an accurate representation of the senior class.

Summary

The purpose of this study was to identify the academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. Chapter 3 outlined the study and the methods used in order to provide credible data. A case study approach was used to frame the data within the natural classroom setting, and multiple forms of data were collected to provide a deep understanding of the topic. Furthermore, the use of several types of data triangulated the results to increase transferability.

Table 3-1. The observation protocol, rule for inclusion, and supporting literature

Category	Rule for Inclusion Maykut and Morehouse (1994)	Supporting Literature
Using Search engines to locate information related to the project	Student use of a search engine effectively beyond the basic word search in order to retrieve relevant information	Hagood (2009); Leu et al. (2004)
Evaluating information usefulness to the project	Students actively thinking about the information they have gathered and if it would properly portray the message they are trying to convey and its usefulness	Leu et al. (2004); New London Group (1996)
Using word processing effectively to format a document	Student use of a word processing program to properly format their document by changing font, margins, spacing, etc.	Hagood (2009); Leu et al. (2004)
Using email effectively to communicate and transfer information	Student use of email to communicate effectively and share information	Leu et al. (2004); New London Group (1996)
Identify important questions to ask in order to solve issues encountered during the project	Students actively creating and asking relevant questions needed in order to solve a problem during the project	Leu et al. (2004)
Locate information to answer questions	Student use of the resources around him or her to find the answers need to move forward when an issue has occurred	Leu et al. (2004)
Using ICTs to share/publish information	Student use of ICTs to upload and/or share their personal creations with others	Leu et al. (2004)
Creating and working with alternative texts, including multimodal texts	Student creation and interaction with alternative texts using multiple formats	Hagood (2009); New London Group (1996)
Using collaborative practices	Student demonstration of the social nature of literacy by collaborating with each other to enhance their final product and/or answer questions	Gee (1996); Hagood (2009); New London Group (1996)

Table 3-2. Criteria and standards used to create final artifact rubric

Category	Standard(s)	Supporting Literature
Main Idea / Exposition	21.) Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.	Lambert (2007)
Mechanics / Grammar	36.) Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.	
Senses	21d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.	
Plot / Organization	21c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). [W.11-12.3c] 21e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	
Personal Experience	22. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	Lambert (2007)
Language	35. Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. 37. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.	
Narrative	21. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.	
Music	33. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	Leu et al. (2004); Hagood (2009); Lambert (2007)

Table 3-2. Continued

Category	Standard(s)	Supporting Literature
Images	Standard 33 (see above)	Leu et al. (2004); Hagood (2009); Lambert (2007)
Narration	Standard 33 (see above)	Leu et al. (2004); Hagood (2009); Lambert (2007)
Technical Elements	24. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	
Digital Citizenship	Standard 24 (see above)	Leu et al. (2004); Hagood (2009)
Final Product Elements / Editing	33.) Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	Leu et al. (2004); Hagood (2009); Lambert (2007)
Storyboard	23. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	Leu et al. (2004); Hagood (2009); Kajder (2004)
Final Product Upload	24. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	Leu et al. (2004); Hagood (2009)

CHAPTER 4
FINDINGS

This chapter presents the results of the study. In order to obtain these results the following research questions were examined: (a) In what ways, if any, are new literacies evident during a digital storytelling unit within an English 12 classroom? (b) In what ways, if any, do students meet English 12 objectives related to the writing and language standards during a digital storytelling unit? In order to address these questions, data in the form of observations, student reflections, and final student artifacts were analyzed.

For both research questions, data were analyzed using the constant comparative method (Spradley, 1979). Observations were analyzed using the observation protocol (Appendix C) created from the state standards and new literacy literature. Student artifacts were analyzed using a rubric (Appendix B) also created from state standards and previous literature. Data were constantly analyzed throughout the process and several new literacies and academic outcomes were evident. These themes are presented in this chapter.

Participants

Nineteen of the 26 students who completed the digital storytelling unit participated in the study. Seven students opted out of the study, for a total participation rate of 73%. The teacher, Mary, who participated in the study, teaches two regular English 12 classes. Observations for this study were completed in one of these two classes; however, digital stories from both classes were analyzed to increase the number of analyzed stories providing data. I observed 11 of the 19 students who participated in the study. The remaining eight students were recruited from the second English 12 class in order to increase the number of analyzed digital stories. Further, all

of the students in the class that was observed returned IRB consent forms to participate in the study.

The composition of students who participated in the study was diverse, with a mix of gender, race, and academic levels. Students ranged in age from 17 to 19. Nine students (47%) were female; while 10 students (53%) were male. The racial composition of students included nine Caucasian students (47%), eight African American students (42%), one Hispanic student (5%), and one Multiracial student (5%). Seven students (42%) received free or reduced lunch. The average GPA among participants was a 2.74, ranging from 1.16 to 3.75. Average English scores for participants in grades 9 through 11 was 77%.

Project Overview

I observed students creating digital stories from their "This I Believe" essay. "This I Believe" is an organization that seeks to engage individuals through the writing and sharing of essays about a core value that guides their daily lives. These essays are based on personal experiences that create a narrative that leads to the understanding of a personal belief and guides the writers' actions within their daily activities. Students wrote on a variety of topics including patriotism, finding yourself through what you love, the ability of laughter to heal, and the power of friendship. "This I Believe" essays are meant to be brief. The recommended range is between 350 to 500 words in order to keep the essay concise and on point. Students used computers to create their written piece and iPads to create their digital component. Additionally, students used either Toontastic or iMovie for iOS in order to edit their final product. Table 4-1 outlines the topics, software used, and word count of the 19 analyzed digital stores.

Table 4-1. Student digital story overview

Essay	Topic	Software Used	Word Count
1	Team sports teach life lessons	iMovie	500
2	Turning no into a positive	iMovie	562
3	The spirit of Patriotism	iMovie	398
4	Bad owners make bad dogs	iMovie	315
5	Caring for others is important	iMovie	490
6	Everlasting love	iMovie	441
7	Finding yourself through what you love	iMovie	329
8	Humility and self-determination lead to success	iMovie	466
9	Pets can be comforting	Toontastic	580
10	Brotherhood	Toontastic	487
11	Hard work and perseverance lead to good things	Toontastic	536
12	Friendship is vital for life	Toontastic	514
13	The struggles of being an illegal immigrant	Toontastic	485
14	Help those in need	Toontastic	422
15	Build on your past	Toontastic	740
16	The importance of participating	Toontastic	420
17	Respect	Toontastic	449
18	Laughter heals	Toontastic	460
19	Remember to laugh	Toontastic	486

Findings for Research Question 1

This section reveals the findings related to research question 1 which evaluated new literacies evident during the unit. Hsu and Wang (2010) posited that new literacies are needed to effectively work in the 21st century. The observation protocol and student reflections were used to organize these data. Based on the literature, the following categories were selected to form the observations protocol:

1. using search engines to locate information related to the project;
2. evaluating information usefulness to the project;
3. using word processing effectively to format a document;
4. participating effectively in online discussion boards;

5. using email effectively to communicate and transfer information;
6. identifying important questions to ask in order to solve issues encountered during the project;
7. locating information to answer questions;
8. using ICTs to share/publish/organize information;
9. creating and working with alternative texts, including multimodal texts; and
10. using collaborative practices.

After completing the observations, I discovered that the results within several categories were intertwined. Therefore, I determined that several of these categories could be combined and condensed into a total of four main categories in order to present the results.

The following new literacy categories are discussed within this chapter after combining multiple criteria from the observation protocol into one of the following four categories: Working with ICTs and Multimodal Texts, Locating Information, Evaluating Information Usefulness, and Collaborative Practices. These themes, along with a brief explanation of each, are described within this section.

Working with ICTs and multimodal texts describes the use of ICTs to share, publish, organize, or create information, as well as, working with multimodal texts to communicate. This theme is a combination of categories three, four, five, eight, and nine from the observation protocol as well as the artifact rubric. Locating information depicts the use of search engines and other resources to locate information for the project, answer a question, and/or solve a problem. This theme is a combination of categories one, six, and seven of the observation protocol. Evaluating information usefulness describes the act of determining the usefulness of information to the

situation or process. This theme was derived from category two of the observation protocol. Finally, collaborative practices portray the act of working together. This theme was derived from category ten of the observation protocol. Table 4-2 displays the final themes and the areas of the observation protocol which informed these themes.

Table 4-2. Combination of themes overview

Theme	Observation Protocol Criteria
Working with ICTs and Multimodal Texts	(3) using word processing effectively to format a document; (4) participating effectively in online discussion boards; (5) using email effectively to communicate and transfer information; (8) using ICTs to share/publish/organize information; (9) creating and working with alternative texts, including multimodal texts;
Locating Information	(1) using search engines to locate information related to the project; (6) identifying important questions to ask in order to solve issues encountered during the project; (7) locating information to answer questions;
Evaluating Information Usefulness	(2) evaluating information usefulness to the project;
Collaborative Practices	(10) using collaborative practices.

Working with ICTs and Multimodal Texts

The most prominent new literacy evident during the digital storytelling unit was working with ICTs and multimodal texts. In order to complete the written component of their digital story, students used both Macintosh and Windows computers. Of the 11 students observed, nine students (82%) used Windows computers and two students

(18%) used Macintosh computers. Eight of the students who used Windows computers used school provided laptops with one student choosing to use a personal computer. Both students who used Macintosh computers used personal devices. However, all students used school provided iPads to complete the digital component of the digital storytelling unit. The school provided iPads were equipped with two pre-installed editing applications, Toontastic and iMovie. Both iPad applications had limited features as compared to their computer counterparts, but still offered an adequate outlet for video editing within the classroom.

Nineteen digital stories from two English 12 classes were analyzed in order to ensure data were complete. Of the 19 digital stories analyzed, 11 students (58%) chose to use Toontastic and eight students (52%) used iMovie for iOS. Other ICTs that comprised the observation protocol included discussion boards and e-mail. Although commonly used within the classroom observed, discussion boards were not used directly during this digital storytelling unit and therefore did not provide data for this investigation. Four instances regarding e-mail occurred during the 12 observations. Although a relatively low occurrence rate (33%), these instances are included within the data because they revealed an area of need within the unit. Two other ICTs observed being used during the digital storytelling unit were Google Drive and the school's learning management system. Students were observed interacting with these ICTs in three main areas: creating their digital story, sharing their digital story, and communicating.

Creating their digital story. In order to create their digital stories, students were observed interacting with new literacies in four phases. These phases overlapped

and students moved freely between them. These three phases included writing, saving, and editing media.

Students used Google Drive in order to type and format their written piece to be shared with Mary. The school in which the study was conducted provides Google apps accounts for all students, which allowed students to maintain Google Drive folders, and email accounts as well as access other Google features.

Nine of the 11 students observed (81%) chose to work directly on the computer while writing their rough draft. One of the 11 students (9%) moved to the hallway to use dictation software to recite his story directly into the computer in order to get his ideas out before beginning his revisions. The remaining student (9%) opted to hand write her rough draft before beginning to type it into the computer. After completing an initial draft, 10 of the 11 students worked directly on the computer within Google Docs to make edits and revisions. The remaining student worked within Microsoft Word 2010.

Once students made their initial revisions and felt comfortable with their first draft, they used the “share” feature within Google Docs to share their draft with a peer. The student with whom the draft was shared made comments directly on the essay in Google Docs for consideration and review. Comments included grammar mistakes, flow considerations, and other suggestions that students thought would help strengthen the piece. Ten of the 11 students (91%) successfully completed this process. The remaining student did not submit her draft for peer review. Figure 4-1 is an example of student feedback on another students draft within Google Docs.

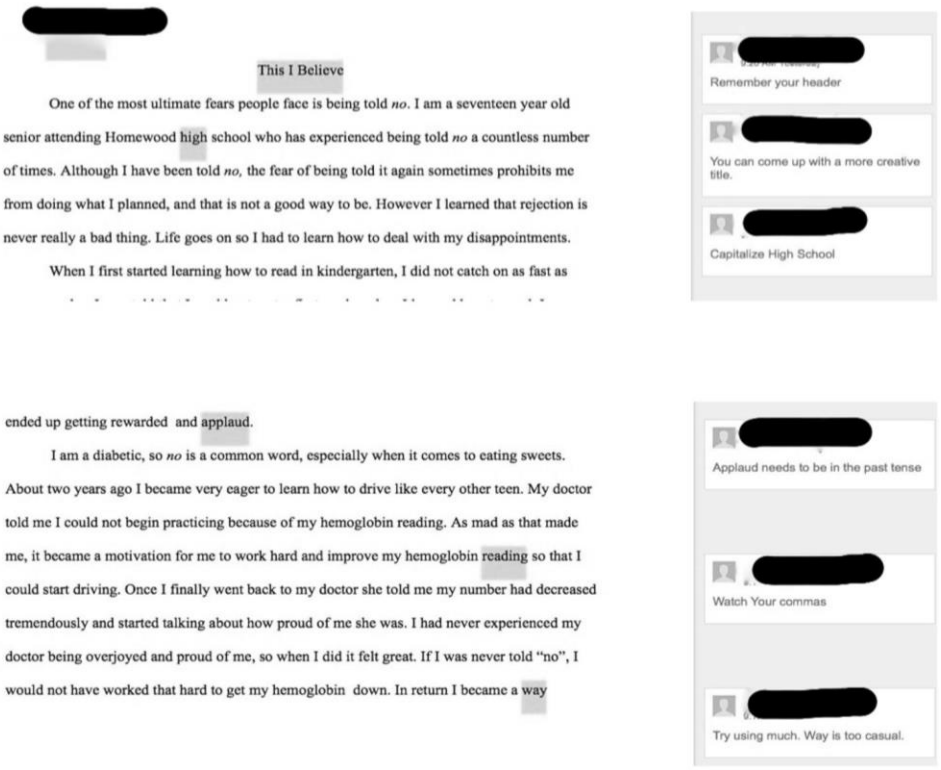


Figure 4-1. Example of student feedback on rough draft

Another new literacy evident during the writing phase of the digital storytelling unit included formatting using a word processing program. Compositions were constructed using the Modern Language Association (MLA) format guidelines. Mary supplied students with an example of a properly formatted MLA document through the school learning management system. Figure 4-2 shows an excerpt of Mary's MLA example formatting style sheet.

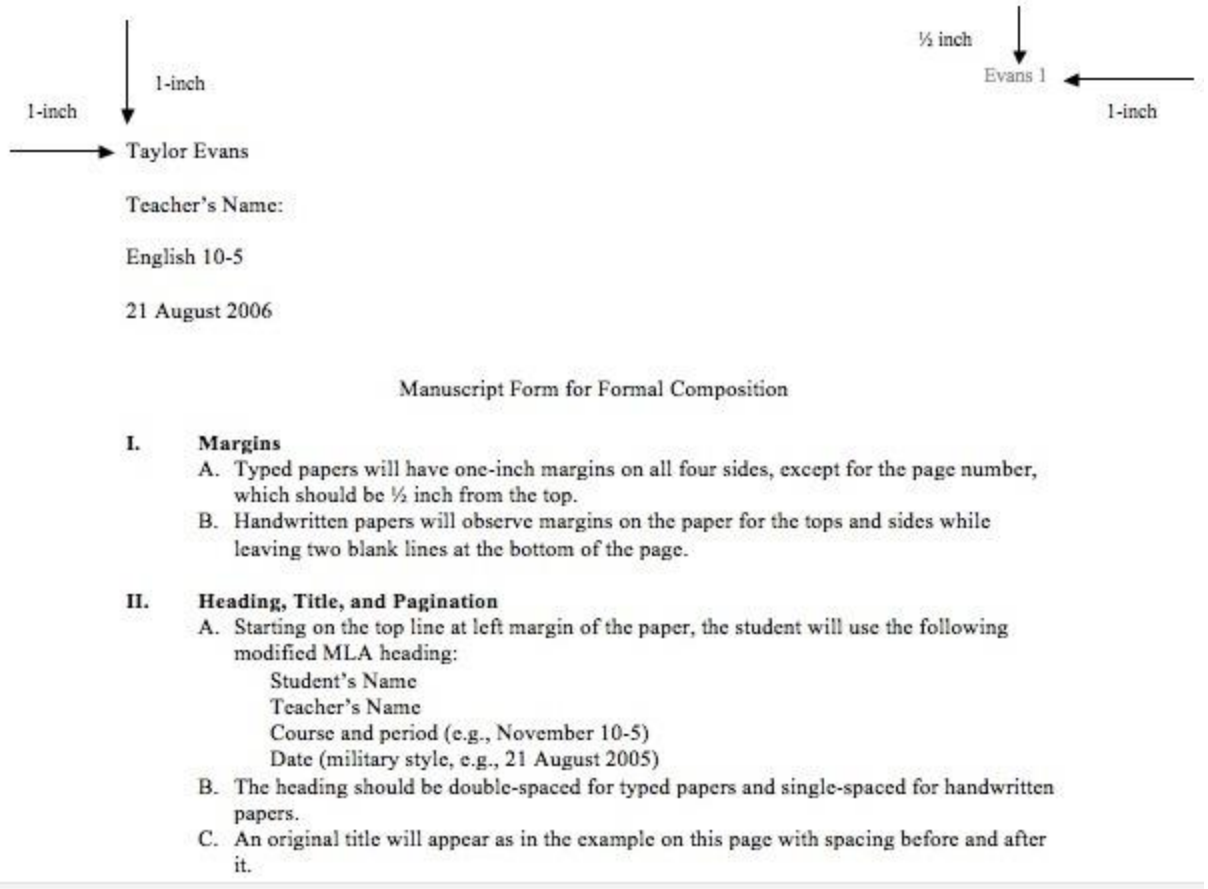


Figure 4-2. MLA example formatting style sheet

Students were instructed to use this document in order to format their own documents; therefore, they had to use basic formatting tools from the word processing toolbar in order to properly format their document in MLA style. To analyze students' ability to replicate MLA formatting within their own documents, the 19 digital stories were divided into the following three categories: properly formatted documents, documents with minor formatting errors, and documents with major formatting errors. Properly formatted documents included documents that were successfully formatted in MLA style. Figure 4-3 shows an example of a student's properly formatted document based on MLA style.

[redacted] 1

[redacted]

Mrs. [redacted]

English 12-2

9 December 2013

Everlasting Love

My life was changed on an ordinary Monday morning in seventh grade when I agreed to go to a bible study with my friend. Not knowing anything about God I began to second-guess my decision. That day I went to the bible study not knowing at the time the impact it would have on my life. For the first time I heard

Figure 4-3. MLA properly formatted student document

Documents with minor formatting errors included documents that contained small errors such as minor heading, font, or spacing issues. Figure 4-4 is an example of a heading error, Figure 4-5 is an example of a font error, and Figure 4-6 is an example of a spacing error.

[redacted] 1

[redacted]

TIB

Mrs. [redacted]

December 9, 2013

This I believe

I believe in the spirit of patriotism. Now I do not mean I believe in politics. I believe in the ideals that this great nation was founded upon. My father, my uncle, and my grandfather served this country in the Navy. Two of my uncles performed their service in the Army Reserve.

Figure 4-4. MLA heading error within a student document

[redacted] 1

[redacted]

Mrs. [redacted]

English 12-5

6 December 2013

I remember one day of elementary school when i was 7 years old, i was running around the class, making a mess during free time, i noticed that a classmate was in the corner by himself. I had not seen him talk or laugh all day. I felt sorry for him and wanted to make him smile. I was not that close with him, in fact, I had never even talked to him. I made it my goal for the day to cheer him up at no matter what.

Figure 4-5. MLA font error within a student document (Veranda Size 8)

This I Believe

There are many things in life the can be looked at as a guideline to life. For some people it may be school, for some it may be church, but for me it is baseball. Because in baseball the rules and game changes as time goes on. For example the starting point is in tee ball where the ball is sitting and is easy to hit. Then work your way up to pitching machine and then to kid pitch and if you are lucky college and maybe even the pros. I believe my life is like baseball.

First I start out with tee ball. In tee ball I am able to hit off a tee, so the ball is not moving. The tee is like an aid in life that helps out, and makes things easier. Life aids young people all the time. For example, when I would walk across the street my mom or dad would

Figure 4-6. MLA spacing error within a student document

Documents with major formatting errors showed little or no MLA style formatting. Figure 4-7 is an example of a document with major formatting errors.

[redacted]

This I Believe

Laughing changes the world in many way when you are feeling down and out, just smile because there someone who has it worst then you do. The day my uncle passed away I remember like it was yesterday, It was about 7:30 at night I was sitting on the couch watching a movie, enjoying life. So my mom comes storming through the door, I thought she just had a bad day at work but

Figure 4-7. Student document that contains major formatting error

Of the 19 digital stories that I analyzed, 11 were properly formatted within the MLA style (57%). Five documents contained minor formatting errors (26%), and three documents contained major formatting errors (16%). Therefore, the vast majority of students were able to replicate MLA formatting within a word processing program with minor or no errors.

Mary did not discuss formatting during class. Instead, students were expected to use their prior knowledge and previous experiences in order to achieve the desired outcome. Within the observed class, students appeared to be comfortable using the word processing program on the computer and in the Google Docs version. None of the students appeared to be confused and no major issues surfaced with students during this phase.

Due to the use of Google Drive for peer review, 10 of the 11 students continued to use Google Docs to format their final product since they had already typed their draft in Google Docs. Nine of the 11 worked directly in Google Docs from the beginning of the project. The student who used dictation worked within Microsoft Word for Mac before transferring his document into Google Docs using the copy and paste feature. Furthermore, the student who hand wrote her first draft typed her story in Microsoft Word 2010 and was the only student who did not complete the student revision section of the unit. The students I observed using the Google Docs word processing program to format their documents appeared to be comfortable with its conventions and navigated through the program with ease. Furthermore, these students encountered little or no issues during the formatting process.

The second area in which I observed students interacting with new literacies was through the process of saving media to be used in their digital stories. Specifically, students saved images to be used later in their digital stories to their Google Drive folders. All 11 students (100%) within the observed classroom were able to successfully complete this task. Students uploaded images to their school provided Google apps account before making selections for their final projects. Of the 19 digital stories analyzed, 17 students (89%) used the Google search engine to locate and save digital images. The remaining two students, both female, chose to use personal photos from their Facebook and Instagram accounts. Both of these students were able to successfully save photos from their social media accounts to their Google Drive accounts for later use in their digital stories.

The use of Google Drive to save students' written material, as well as to store their chosen media, revealed an area of need. Student file structure within Google Drive was disorganized. Students did not know how to use folders and had many documents entitled "Untitled Document", which is the default title within Google Docs. Figure 4-8 is an example of one student's Google Drive account folder.

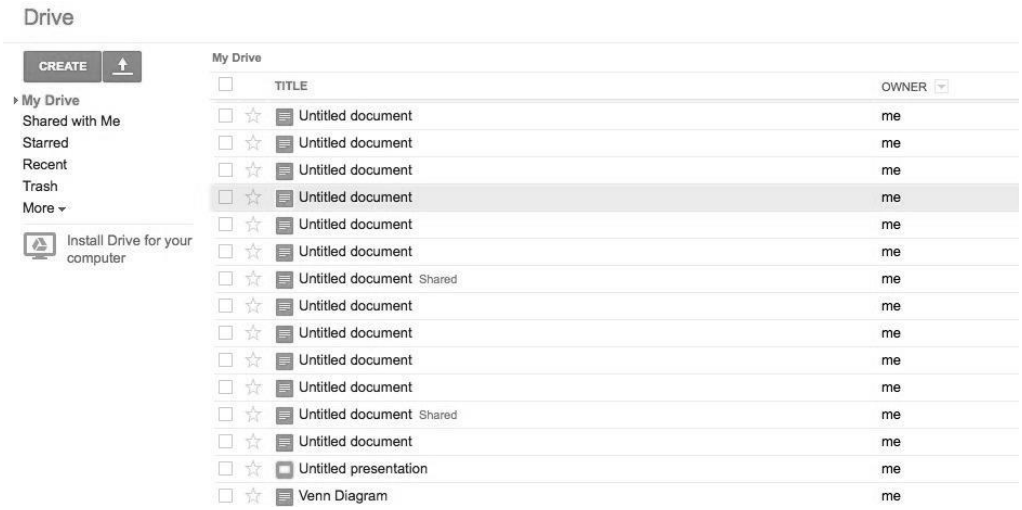


Figure 4-8. Student Google Drive account

This filing system proved to be ineffective for students and caused innumerable problems. On three occasions I observed students clicking through and opening multiple untitled documents before locating their desired draft. When asked why they did not use folders to organize their documents, several students responded that they had never really thought about it before or had ever used them, so they were not familiar with how folders worked. Another student admitted that she did not know how to create a folder or move a document into a folder. There was consensus among many of the students that they too shared this concern. Mary used this discussion as an opportunity to show students how to rename their documents within Google Drive.

Although students appeared to make improvements in using the file structure after Mary demonstrated how to do this, a majority of students still had "Untitled Document" files in their Google Drive and rarely used folders to organize documents. Of the 19 student participants, two students (11%), both female, named their documents within their Google Drive accounts. The remaining 17 students (89%) had several "untitled documents" within their Google Drive accounts.

Four of the 19 students (21%), three females and one male, had at least one folder in their Google Drive accounts. The remaining 15 students (79%) had a long string of documents, presentations, and images for all of their classes, as well as personal documents, organized in no particular order. Although students were not organizing their documents effectively in their Google Drive folders, they were actively using folders to save work for multiple classes. Thus, students were able to use Google Drive to save information, documents, and presentations; however, their organization and file structure caused issues in retrieving material. Only two of the four students who

had folders in their Google Drive accounts used them to properly organize their documents. The remaining two used the folder, but also had a long string of documents that were not in a folder.

As students worked on gathering and saving images, they reflected on copyright issues. At the beginning of the unit, Mary discussed copyright issues. Due to the limited amount of time to complete the digital component, students were allowed to use images from the Internet in their projects. However, fair use was discussed and students were educated about photo watermarks, or photos in which a faded mark is placed on the photo denoting copyright. Mary informed students not to use these photos in their projects. Furthermore, students created a document that cited all photos used. Students had done this previously and selected appropriate photos to use as well as documented these photos as they completed the process.

Another area in which students interacted with new literacies was during the editing process. Students used multiple components to create their final digital story, including photos, music, and narration. These elements worked together to convey their desired message, and students worked with the components in a variety of ways. Students uploaded selected images into their chosen editing program from their Google Drive account. Students then arranged photos in the desired order that they laid out during the storyboarding phase. Students also selected their preferred music to accompany their stories.

All 19 students (100%) used stock music available in their chosen editing program to avoid the use of songs with lyrics that would distract from the narration. Students recorded their narration and began finalizing the length of time their photos

would appear to match the recorded narration. Stock music was also preferred because it does not violate copyright rules and is provided by the programs to be used within edited projects. The ability to upload, manipulate, and combine all of the different components into one final digital story that conveyed their desired narrative and message are all considered to be valuable new literacy skills.

Both Toontastic and iMovie offer advanced editing features beyond adding and editing pictures, music, and narration. Fourteen of the 19 digital stories analyzed (79%) utilized additional features of the editing program. These features included adding text or titles, picture movement, and animated features. The five digital stories that did not include additional features were produced by students who used Toontastic.

Six of the 19 students (32%) added text or titles to their stories. For the purpose of this study, the use of text and titles included any use of typed or handwritten words within the project. Four of these six students (67%) used iMovie and two students (33%) use Toontastic. Students used the text feature to introduce their topic and/or to enhance an idea within a photo. Five of the 11 students who used Toontastic (45%) used the animation feature. This feature was not available within iMovie. Animation was defined as adding a cartoon character or special effect that provided animation or movement of a character or special effect over the picture.

Two of the five students (40%) used the animation feature to animate certain elements from their stories, such as adding falling rain. Three students (60%) used the animation feature for entertainment purposes, such as having a character move around the screen. However, none of the students who used the animation feature in Toontastic for entertainment used this feature to add to the theme or purpose of their

stories. Eight students (100%) who used iMovie for their digital stories used the picture movement feature. Picture movement was not available within the Toontastic application. Picture movement included zooming in or out of a photo or panning across a photo from side to side. Picture movement was used to add interest and/or to emphasize a specific area of a photo. Table 4-3 displays a breakdown of the extra features utilized in the digital stories.

Table 4-3. Student use of extra features

Feature	Toontastic Users	iMovie Users	Purpose
text/titles	2	4	title – 3 enhance photo – 2 both - 1
animation	5	N/A	animate story elements – 2 entertainment – 3
picture movement	N/A	8	add interest and emphasize photo – 8
no extra features	5	0	N/A

Sharing their digital story. The second area in which students were observed working with ICTs is through the process of sharing. The 11 students who used Toontastic to create their digital stories uploaded their final videos directly from the program to Toontube, the video sharing website directly linked to the Toontastic application. At the time of this study, Toontube was the only method of sharing allowed by the Toontastic application. Figure 4-9 shows the export option within the Toontastic application.

Students who chose to use iMovie exported their final video to the iPad camera roll, and then uploaded videos to their Google drive accounts and shared them with the teacher.

Figure 4-9. Movie export within Toontastic

Figure 4-10 is a screenshot of the export feature in the iMovie application, and Figure 4-11 shows the share function in Google Drive that students who used iMovie utilized to share their stories with Mary.

Figure 4-10. Movie export within iMovie

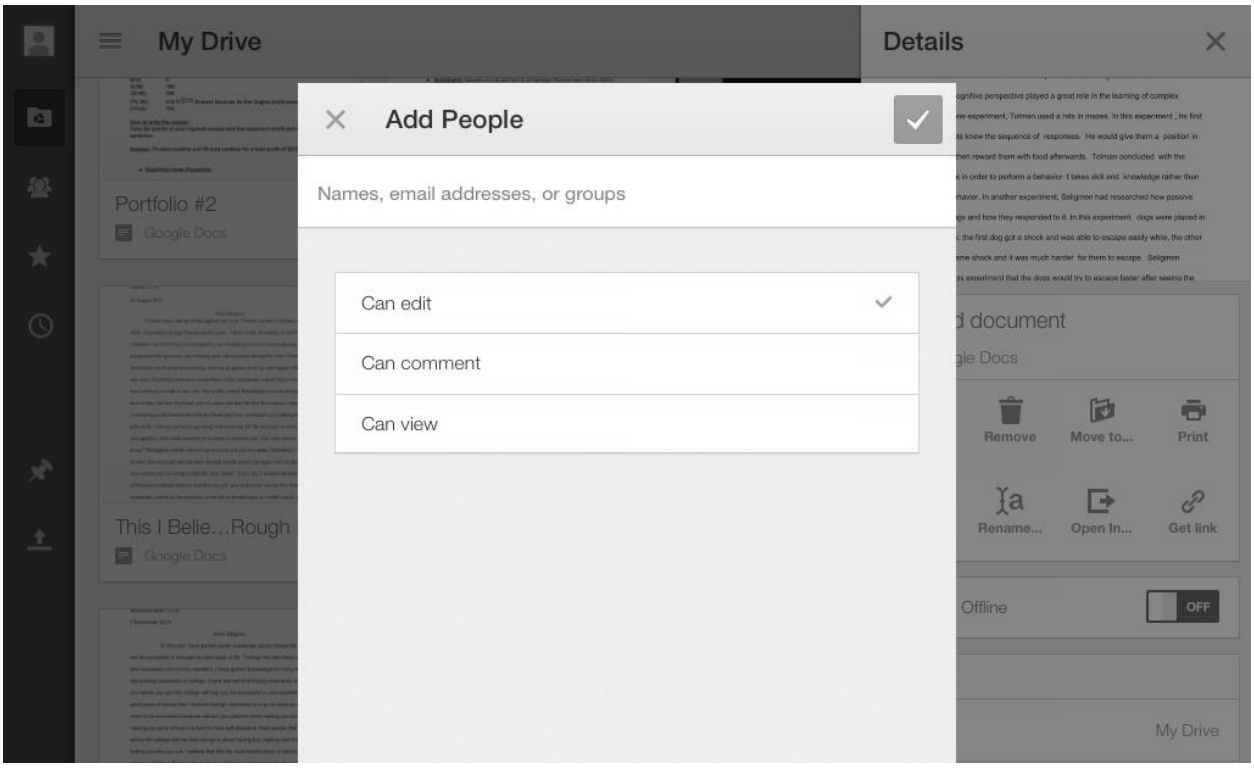


Figure 4-11. Google Drive share feature

All 19 of the student digital stories that were analyzed for this study were successfully shared through either Toontube of Google Drive.

As previously mentioned, students shared their written digital stories with other students in order to receive peer feedback before making revisions. Ten of the 11 students observed (91%) were able to successfully complete this task. Additionally, students shared their written drafts with Mary through the school learning management system. Students formally submitted a rough draft, a final draft, and a draft to be sent to the “This I Believe” organization if they desired to be considered for possible publication. All of the students within the observed class were able to successfully upload and share a rough draft and a final draft through the learning management system. Of the 19 digital stories analyzed, 16 (84%) uploaded their final revised essay to the “This I

Believe" website for possible publication. The student essays were still under review when this was written.

Communicating. The final way in which students interacted with ICTs throughout the digital storytelling unit was through the act of communicating. Students used the learning management system to communicate with Mary. As previously mentioned, students submitted a rough draft and a final draft through assignments created by Mary online within the learning management system. Mary used this outlet to communicate with students and provide feedback on both drafts. Figure 4-12 is an example of feedback provided by Mary on a student's rough draft, and Figure 4-13 is an example of feedback provided by Mary on a student's final draft.

Figure 4-12. Teacher feedback on student rough draft

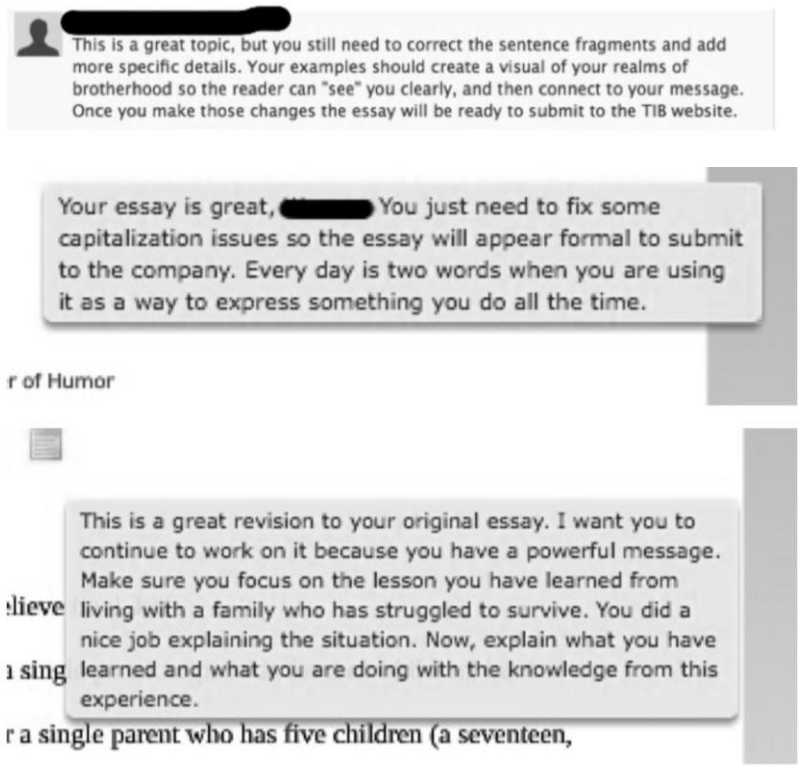


Figure 4-13. Teacher feedback on student final draft

Students also used the learning management system to communicate with Mary about versions between their rough draft and final draft. Figure 4-14 shows an example of this type of student communication through the learning management system.

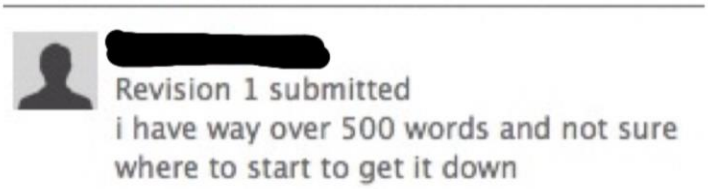


Figure 4-14. Student use of communication through LMS

Students worked extensively with the learning management system since it was the format in which they submitted all written work during this project. Additionally, it was the mechanism students used to receive feedback from Mary on their work.

There were four instances in which student e-mail use occurred during my observations. During the first instance, the student was unaware that he had a school

provided e-mail address. When the student was asked to use his school e-mail to submit an absentee reminder to Mary, he responded, “We have school e-mail?” Another student who was asked to do the same thing had to be instructed regarding how to login and send an e-mail. During the third observation, a student was asked to e-mail her rough draft to Mary because she was having trouble uploading her draft to the learning management system and class time was almost over. The student commented, “Oh, I never would have thought of that” and then stated that she did not know how to access her e-mail or password. The fourth observed instance of e-mail involved a student successfully sending an e-mail from her mobile device.

In all four of these instances, students appeared to be confused and uncomfortable with the process. This discomfort appeared to be related directly to the use of e-mail and its format, as all of these students showed signs of disdain towards the e-mail format in general. Even the student who was successful sending an e-mail from her mobile device asked if she could “just text it instead” before she sent the e-mail. Although students were very experienced with regard to sharing through social media and texting, they seemed to struggle with traditional e-mail. The ability to use e-mail effectively, however, is an important, real life skill and new literacy.

Locating Information

The second most prominent new literacy evident during the digital storytelling unit was locating information. This included the students’ ability to identify important questions and use search engines and other resources to locate information to answer questions and/or solve problems. Furthermore, this new literacy included the ability to locate information for use within their digital storytelling projects.

In order to provide a more authentic learning environment, Mary worked more as a facilitator as recommended by the literature on best practices from Chapter 2. She purposefully gave students space to complete self-directed work. Students worked together and individually to locate information. The primary occasions in which students were observed locating information throughout the project included gathering photos to use in their projects and looking for information that would help resolve an issue they had encountered during the process.

Gathering photos. The first instance in which I observed students locating information was through the use of the Google search engine, which students used to search for materials for their projects. Students used the Google search engine to locate photos to complete their digital stories. All 11 students in the observed classroom used the Google search engine to look for photos. In order to complete these searches, students searched for specific photos that they had previously outlined in the storyboarding phase. Students searched directly in Google images using specific word choices. Students sorted through photo options to find desired photos. Furthermore, I observed students adjusting the search as needed if a desired photo did not present itself within the original search.

After an initial search, two students decided to use personal photos from their social media accounts because they were not satisfied with the options within Google. The remaining nine students continued to use the Google search engine in order to locate photos. Because of the limited amount of time that Mary could check out the iPad cart, students used personal and school provided laptops to find all of their photos before they began the editing process on the iPad. Students used Google Drive to

upload and save their photos before transferring them to the iPad. The nine students who used Google images to locate their pictures were successful in saving these pictures to their Google Drive accounts and importing them to their editing program and the remaining two students were able to successfully save their images from their social media accounts to Google Drive.

Students learned quickly that they would need to be specific in conducting a photo search. One student began her search by typing “best friends”. This, of course, returned a substantial number of results. She narrowed her search to “childhood friends eating ice cream”. This revealed a more manageable number of results. I observed two other instances of students using specific words instead of vague word choices within their word searches. As students in the observed class worked through their list of photos needed for the project, their searches became increasingly more specific and students appeared to be more comfortable with the process. Two of the students I observed during this process searched multiple topics or word choices before they found a specific photo to use. Therefore, students utilized a trial-and-error approach to finding photos by refining their search terms to locate desired photos for their digital story.

Additionally, four students seated on the left side of the room found the advance search option in which they were able to control the size of the photos that the results would return. This allowed them to remove all of the small photos that would be distorted when enlarged. Figure 4-15 is an example of how these students used the advanced search option.

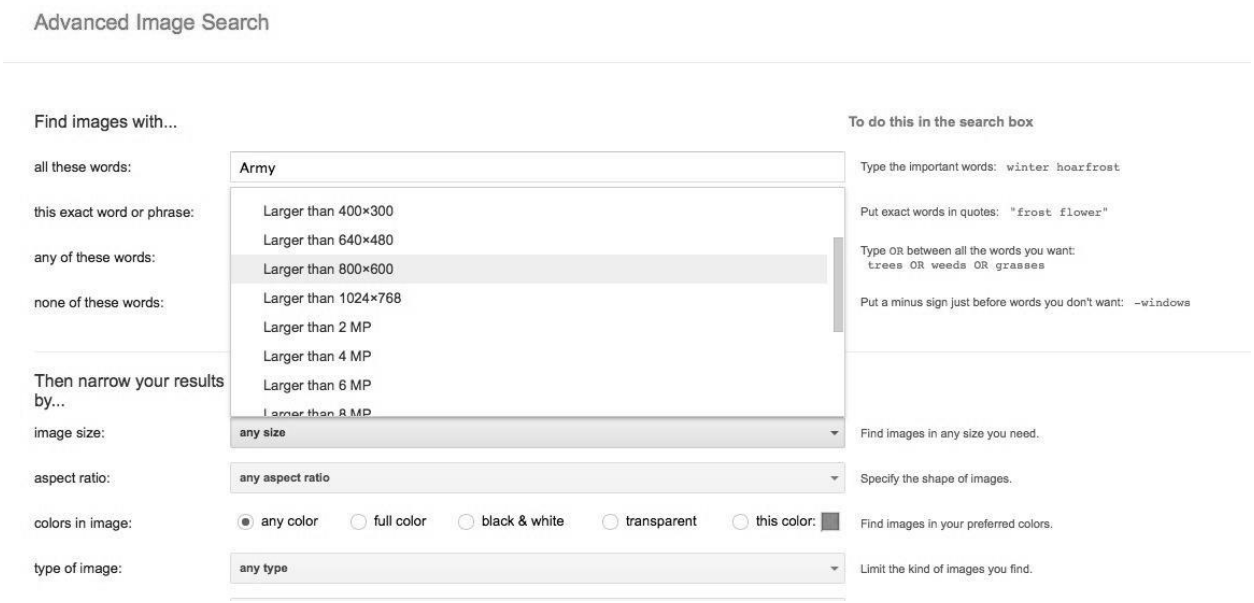


Figure 4-15. Advanced search option within the Google search engine

One student within the group sitting on the left side of the room was the first to notice this option. He proceeded to share this feature with the three people seated around him. All four students continued to use this feature throughout their image search process. However, they did not share this information with the students across the room. When the remaining seven students came upon a small photo within their searches they would skip over it and continue to search for another photo. Therefore, the advanced search feature saved a few students time and frustration. I did not observe the use of other advanced features over the course of this unit. Most students seemed content to sort through a large number of photos. As previously mentioned, students were allowed to use photos as long as these photos did not contain a watermark or a specific notification not be reproduced. Students maintained a document containing citations for all of the photos they used within their projects.

Solving an issue. Occasionally, the technology itself provided an opportunity for students to work on locating information. When the technology or the software did not

work as expected or when students did not know how to perform a certain function, they would have to locate information that could help them. In order to find the necessary information, students would have to ask the right question or questions to find the desired information.

Students found several ways to locate the information they needed throughout the digital storytelling unit. Although many students came to the same conclusions, they often found it in different places. The first option for most students was to utilize Google, or as one student described it, “I just Googled it” (Student Reflection 16). I observed this strategy numerous times throughout the project. Students used the Google search engine to find different forums and other specialty websites to learn how others had accomplished what they were attempting to do. This process directed many students to “how to” videos on YouTube or other video sharing websites.

Although YouTube is blocked at the school where the study was conducted, I observed two students using their personal devices on their cellular signal to watch videos. Another student indicated that she usually just waited until she got home to find the YouTube video that walked her through the required steps to produce the desired outcome. I also observed students using online text tutorials or the program’s help button to obtain additional information.

Although each of these options led to the same content, the method of delivery was different and students had their own personal inclinations for which method they preferred to receive information. An informal verbal survey within the observed class suggested that five of the 11 students (45%) preferred YouTube help videos. Of those five students, four students (80%) were male and one student (20%) was female. Five

of 11 students (45%) preferred online website written directions. Of the five students who preferred online website directions, four students (80%) were female and one student (20%) was male. The remaining female student preferred to use the program's built-in help system when an easy answer was not immediately available.

Although the class was almost evenly split between using website directions and watching a YouTube video, the female students leaned towards the use of written directions while the male students preferred using YouTube videos. All 11 students identified Google as their first step in locating quick and easy solutions. Although the steps were different the outcomes were the same.

I observed students using Google to locate various types of information during each of my observation days throughout the unit. Mary allowed students to locate information on their own; this provided students with opportunities to interact with, develop, and create positive feelings towards the new literacy skill of locating information. Although not always in the same manner or location, students found ways to locate the information and/or resources they needed in order to move forward with their projects.

Evaluating Information Usefulness

Once students were able to locate information, they had to evaluate its usefulness for their specific needs. Therefore, codes within this theme were related to the act of determining the usefulness of information to a given situation or process. The two main ways in which I observed students evaluating information were through material selection and problem solving.

Material selection. In conducting this project, students had to evaluate information on a much deeper level. Previous projects were one-dimensional but

students now had to evaluate multiple dimensions and determine how this information contributed to this project as a whole. As students worked on their digital stories, they evaluated pictures and decided which ones they would include in their project to visually tell their story. I observed all 11 students (100%) sorting through images and carefully making photo selections. Students sorted through multiple photos in order to choose the best one for their stories. I did not observe any students selecting the first photo they came upon. Rather, students scrolled through hundreds of photos before making a selection. Figure 4-16 shows an example of a typical photo layout for students to begin their selection.

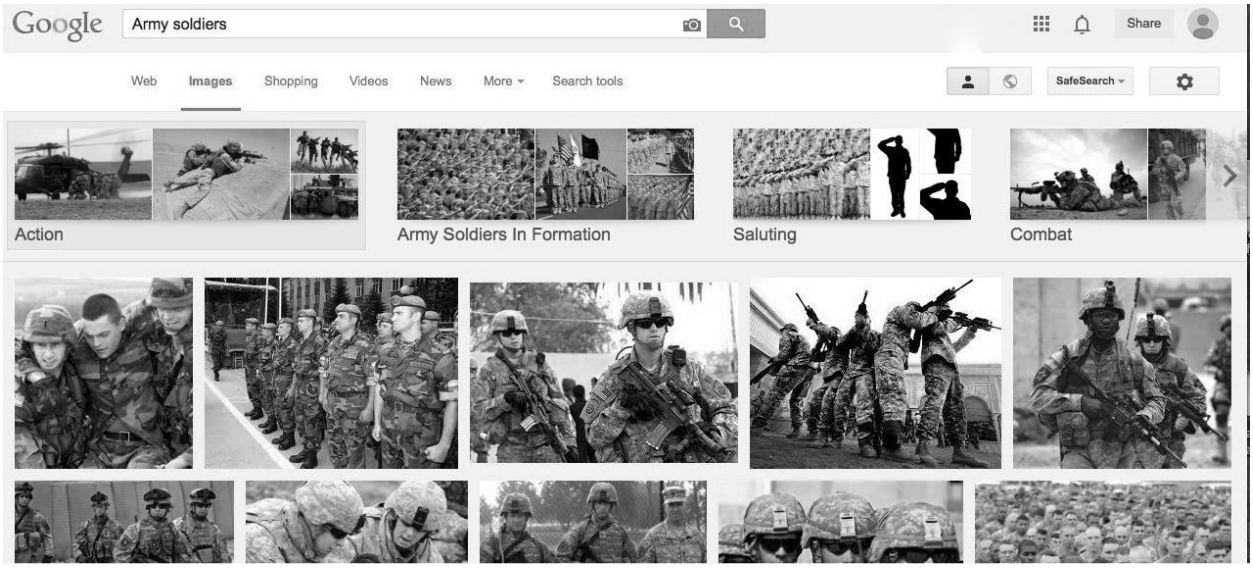


Figure 4-16. Preliminary Google photo search layout

As students reviewed photos, they worked quietly and seemed focused on the process. Students worked diligently and stayed on task. As previously noted, students considered multiple images before making their final selections. In personal reflections, students commented on the process of image selection stating that they made their selections because, “they represented my story” (Student Reflection 1). Other students commented that they matched “what was being said” (Student Reflection 6) or “the

theme” (Student Reflection 18), and specific images “went well with my story” (Student Reflection 9). Therefore, students took time to evaluate the usefulness of each photo within their specific stories.

In addition to photos, students had to evaluate the usefulness of their music selections to determine which music fit the tone and mood of their stories. Students used stock music in each application for their musical selections because it did not contain words that would distract from their narration and did not infringe on copyright issues. Figure 4-17 shows stock music selections available within iMovie for iOS.

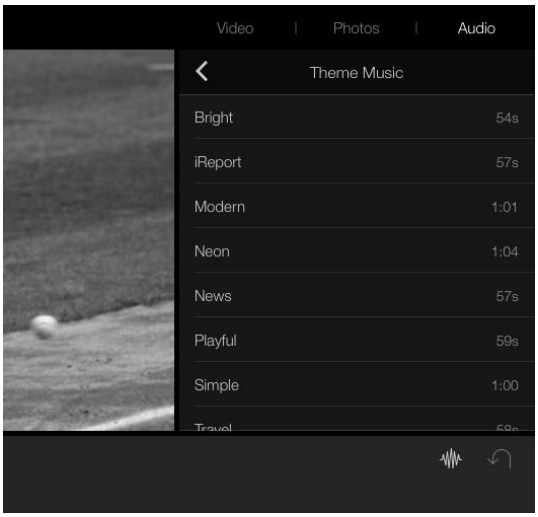


Figure 4-17. Example music selections within iMovie for iOS

Students used headphones to sort through music options and to evaluate which one to use in their own digital stories. In three instances I observed students changing their music selections after they inserted a song and decided that was not a good fit for their digital story. As students reflected on this process, one student commented that he made his music selection based on the “mood of the story” (Student Reflection 19). Another student described his selection because it fit, “the background that I was trying to set up” (Student Reflection 13). Similar to the process of photo selection, I did not observe students selecting the first song they listened to; rather, all students sorted

through multiple songs before making their final selections. The iMovie application offered more diverse options in terms of musical styles than the less sophisticated Toontastic application.

When looking for photos and music for their digital stories, students had to assess each component separately and determine how they would work together in their final digital story. Therefore, students had to evaluate the usefulness of each component both individually and in combination. These activities provided hands-on experience with evaluating the usefulness of information on multiple levels and provided several opportunities for students to interact with new literacies.

Problem solving. Furthermore, students evaluated the usefulness of information to solve a problem. As students were locating information on Google, help websites, YouTube, and other web-based resources, they had to determine if the information they found would be useful within their own personal situations. Students evaluated information and decided if they needed to keep looking or if the information they found was sufficient enough to try. Students used prior knowledge and previous experiences to determine if this newfound information would address their issue or lead to a desired result.

After evaluating the information in relation to what they already knew, students made a decision regarding whether or not they would try this solution. Students did not always make the right evaluative decision in these situations, but they learned something new each time. When things did not work in the manner they expected based on their previous evaluation of the situation, students used this new information to refine their search for solutions. The students I observed during this process did not

appear to be unsettled by this outcome but transitioned easily into a new, refined search. Students tried new approaches until they came upon a solution that adequately addressed their problems.

The processes of locating and evaluating information were ongoing and cyclical. As students worked on their projects, they were constantly searching for new information and evaluating its usefulness. When searching for a solution to a problem, students had to determine if the information would be useful. Locating and evaluating information is important in real world situations; this digital storytelling unit provided students with hands on experiences with both of these new literacies.

Collaborative Practices

The final theme derived from research question 1 was collaborative practices or the act of working together. Students worked together in a variety of ways on this project. From asking other's opinions to helping each other understand how to do something, this project was social in nature. According to the students, collaboration made the project more enjoyable. Therefore, students wanted to work on their projects more frequently. The two main areas in which I observed students collaborating with one another were through asking for an opinion on their digital story to improve their work and collaborating to solve a problem.

Asking opinions. Although students completed their own projects individually, I observed each student working with other students throughout the process. One student made the comment, "We usually don't have as much interaction with each other on individual projects" (Student Reflection 13). Students discussed photo and music options with their neighbors. All instances of students asking for opinions occurred between one student and the students around him or her. I did not observe any

students crossing the room in order to ask for another student's opinion. One student was looking for a sports news show type of song and had the students around him vote on three different options.

Students wanted other students' opinions on their work, and they desired to see other students' projects as well. Overall, much like the pilot study, students seemed to have fun working together during the digital storytelling unit even though they were creating individual final products. Students put a great deal of effort into their projects and stayed focus without becoming overly distracted during their collaborations.

Students also collaborated and shared opinions on each other's work through the peer review process. Students supplied questions and suggestions for other students to consider related to their projects. Although this process was more formal than casually asking a neighbor's opinion, collaborations and suggestions were similar in nature. Students used informal language in peer reviews and focused heavily on flow, punctuation, and spelling within the document.

Solving a problem. Furthermore, students worked collaboratively on solving problems. If the technology was not working correctly or working as they expected, students were not hesitant to ask another student for assistance. One student commented, "I don't have a problem asking others for help" (Student Reflection 4) while another student added, "you learn from other people" (Student Reflection 6). One student was getting frustrated when she could not hear any sound from her project. A student next to her quickly showed her the mute switch on the side of the iPad; he did this instinctively and without hesitation.

Additionally, when students discovered something new or found a solution to a problem, the first thing they did was share it with students next to them. Students were constantly sharing information and trading ideas throughout the process. Frequently, another student had solved an issue or problem before Mary could make it across the room. Students learned from each other and on two separate occasions, Mary noted that she was grateful they worked it out together because it was something she did not know how to do.

Findings for Research Question 2

This section describes the findings related to research question 2 regarding academic outcomes. For this research question, I used the observation protocol and final artifact rubric to analyze data. For the purpose of this study, academic outcomes included students meeting course and assignment objectives as aligned with the state course of study. I assessed academic outcomes using the final artifact rubric that I created using the state course of study standards.

In order to address research question 2, the 19 digital stories were assessed separately using the rubric by both me and Mary. Based on these assessments, the final average produced an average grade of 84%. The student average during the semester in which the unit was taught was a 75%; therefore, student grades within this unit were nine points higher than students' English 12 grade within the semester. The average difference between my assessment and Mary's assessment was 2.42. The criteria fields with the highest averages were final product upload, digital citizenship, personal experiences, and plot. The criteria fields with the lowest averages were senses and mechanics/grammar. Table 4-4 provides a breakdown of the rubric along with the final average of each criteria field for both me and Mary.

Table 4-4. Rubric criteria fields and scores breakdown

Criteria Field	Standard(s) Addressed	Field Description	My Average	Mary's Average
Main Idea / Exposition	21. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.	Story contains a clear main idea and exposition laid out in logical order	8.47	8.05
Mechanics / Grammar	36. Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing.	Use of correct conventions such as capitalization, punctuation, spelling and/or sentence structure	8.32	7.47
Senses	21d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.	Use of senses within the narrative to describe personal experiences, including sight, sound, taste, touch, and hearing	7.95	7.26
Plot / Organization	21c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution). 21e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.	Use of organization and sequencing to create an well-organized essay in logical order with a conclusion	8.74	8.16
Personal Experiences	22. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	Use of personal experiences to create a narrative	8.53	8.42

Table 4-4. Continued

Criteria Field	Standard(s) Addressed	Field Description	My Average	Mary's Average
Language	35. Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking. 37. Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.	Use of specific language and sentence types in both speaking and writing	8.26	7.79
Narrative	21. Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.	Use of narrative elements to create a full picture of the setting, events, and ideas	8.53	7.84
Music	33. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	Use of deliberate music choices to match story meaning and tone	7.84	8.21
Images	Standard 33 (see above)	Use of deliberate image choices to match story meaning and tone	8.11	8.47
Narration	Standard 33 (see above)	Use of voice and tone to tell story that can be clearly understood	8.16	8.58

Table 4-4. Continued

Criteria Field	Standard(s) Addressed	Field Description	My Average	Mary's Average
Technical Elements	24. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	Use of features within the editing program to create a complete final product	8.00	8.53
Digital Citizenship	Standard 24 (see above)	Use of technology and elements ethically and with proper documentation	9.11	9.16
Final Product Elements / Editing	33. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.	Use of music, images, and narration as a whole piece to properly tell their story	7.84	8.42
Storyboard	23. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	Use of storyboard template to create a visual outline for the digital component	8.16	8.16
Final Product Upload	24. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.	Use of technology to export, upload, and share student final products	10.00	10.00

The standards assessed through the rubric were divided into the following four areas: writing standards (standard 21), production and distribution of writing standards (standards 22-24), presentation of knowledge and ideas standards (standards 33), and language standards (standards 35-37).

Writing Standards

The unit assessed writing standard 21 which states that students should be able to, "Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details and well-structured event sequences" (Alabama Department of Education, 2010). Standard 21 also includes the following sub-standards in which students need to be able to create a sequence of events using precise words and phrases, such as sensory language and details, to create a complete narrative that includes a conclusion (Alabama Department of Education, 2010). The criteria fields from the rubric that addressed standards 21 included main idea/exposition, narrative, plot/organization, and senses.

Main idea/Exposition. The main idea/exposition criteria field addressed students' ability to orient the reader with their main idea while demonstrating passion for the topic through the exposition. The "This I Believe" format contained specific guidelines for students' written pieces. These guidelines included being specific and brief and using real experiences from their lives to create a personal essay about a belief that they realized through those experiences. "This I Believe" essays included the use of words that were comfortable to the student and required students to name their beliefs within their essays for the reader.

This set of guidelines provided a structure to help students express their main ideas while laying out a narrative exposition based on real events from their lives. The

average score within the main idea/exposition category was 8.26 out of 10; thus, students were able to express their main idea clearly through the exposition using supporting details which were laid out in a logical order. Expressing the main idea and exposition are important elements when creating a written narrative; therefore, this criteria field related directly back to standard 21.

Students expressed their main ideas through the statement of their beliefs; however, they had to support these ideas through the use real events from their lives to build a narrative exposition. Student essay 1 provides an example of a student who began with his belief statement and developed that idea to build an exposition that became more specific. This sequence provided a logical order of events:

> I believe that sports are more than just a hobby or a fun way to exercise. Sports can provide an individual with a sense of responsibility. Team sports are special in particular because they not only provide a sense of purpose, but a sense of unity. . .Sports have helped me personally develop an improved work ethic. During football season, many nights I don't get home until around 6:45 or 7. I come home usually too tired to do anything, but I make myself open my backpack and check to see what homework I have.

Students also used the "This I Believe" format to introduce their main ideas to the reader. For example, "I believe the man who serves his country deserves a higher form of honor then the politicians they watch over and often keep alive" (Student Essay 3). Another student wrote, "I believe that everyone has an opportunity to better themselves and I think that with a little self-determination and perseverance that everyone could make it far, but your success is nothing without humbling yourself first" (Student Essay 8).

By establishing their main idea through the specific “This I Believe” format, students were able to build upon their ideas in the exposition and provide a conclusion in the same format. A third student composed the following:

> I believe in participating in different organizations because it enhances your personal growth … Not participating in different things keeps a person from fully developing opinions of different things they might like or not like because they never experience it. A person would not be able to make as many connections with other people that share the same interest with them. I believe in participating because a person who is involved is engaged with themselves and their community. (Student Essay 16)

By providing a structured format for students to state their main ideas, students were able to focus on creating an exposition that followed a narrative structure and built upon itself allowing the reader to follow the events that led to the main idea or belief.

Narrative. The narrative criteria field assessed students’ ability to use narrative elements effectively within their stories. Through the process of creating their digital stories, students were able to hear and see their stories beyond words on a page. This format allowed students to interact with their work in new ways that revealed errors in pacing, descriptions, and word choice but also allowed time for revision. The average grade within the narrative category of the rubric was 8.12 out of 10; therefore; students purposely used elements within the narrative structure. Thus, this criteria field also addressed standard 21.

Narrative elements utilized within student essays included point-of-view, description, setting, characterization, and atmosphere. Point-of-view is an important narrative element that refers to the narrator in the story. Due to the personal nature of these essays, first person point-of-view was utilized where the narrator was involved in the story. One student noted:

> Once when I was fourteen, I wanted to make a little money. I asked one of my aunts if I could babysit, and she said no because she thought I was too young and irresponsible. I was a little upset, but mainly just wanted to prove her wrong. (Student Essay 2)

This example demonstrated first person point-of-view through the use of the pronoun "I" and describing the situation from a personal perspective. Students also utilized description within their stories to paint a picture for the reader. Student 5 said:

> The day I went to help people were hurt, crying, homeless, careless they lost everything and didn't know what to do. The cleanup crew and other people there came to help start rebuilding homes again. There were nearly 200 people out there helping. (Student Essay 5)

The use of details in the previous example allows the reader to see the helplessness of the situation they were there to help clean up. Although difficult to demonstrate within a short excerpt, pacing was evident within the student's writing. The use of repetition, structure, and length creates pacing as the reader falls into a rhythm and detects sentence pattern and repetition of words. For example:

> Even though there are days I still feel hurt by dad I feel blessed knowing that my heavenly father will never leave me. God is constant with everything. When your life becomes overwhelming, God will help you through it. When you feel abandoned, God will never leave you. When you do not feel worthy enough, God says you have a purpose. I believe in the father who is constantly there. I believe in God. (Student Essay 6)

Narrative elements also included the ability to create the setting in which the story takes place and possible conflict. Student 7 noted:

> We were winding down the three and a half hour practice with a little scrimmage at the end and the offense failed to run a play right numerous times. I could tell by the facial expressions on my teammates faces that we were going to be practicing for a while longer, but something inside of me took over and I started saying words of encouragement to help the team finish practice strong. (Student Essay 7)

In the previous example, the student is able to create a setting of a football practice that is not going very well by setting up the hours and describing to the reader what was happening at the practice.

Characterization is a narrative method used to describe character traits or the personality of a character within a story. Characterization can be direct, where the writer explicitly tells the reader about the character, or indirect, were the writer leaves it up to the reader to find out. The following is an example of direct characterization as it explains the character of aunt Miranda to the reader:

> I admire my aunt Miranda because no matter how much money she made she would always be humble and give back to her family. When the house she grew up in burned down she had another house built right on top of it for my granny. (Student Essay 8)

In the previous excerpt, the reader has an understanding of the character aunt Miranda and her determination; therefore, this is an example of characterization. The final narrative element demonstrated in student essays was atmosphere and dialogue.

> When people came over it was always chaos. Dogs were barking, cats were running around, the neighbors would get annoyed and people thought we were crazy. They would say, “How can you own that many pets?” and “This isn’t a house, it’s a zoo.” (Student Essay 9)

In the previous example, the student was able to describe an atmosphere of chaos and also use direct quotes of dialogue to reinforce her point. Overall, students used a variety of narrative elements to tell their stories.

Plot/Organization. Organization and sequencing are important concepts to understanding narrative writing. The plot/organization criteria field addressed students’ ability to form organized, well-constructed essays; this criteria specifically addressed standards 21c and 21e. Standard 21c involves working with sequencing of the events, and Standard 21e requires students to provide a conclusion to that sequence of events.

I observed improvements in sequencing by students through the creation of a visual outline in the form of a storyboard. The storyboard phase of the project provided an opportunity for students to see their stories in a new way, and it forced students to think about and plan in advance their stories in order to complete the different boxes and elements of their assignment.

One student made the following comment about the number of drafts she typically creates for an assignment, “normally it’s just one and I’m like, ‘yeah I’m going to turn it in,’ but on this one I did a few drafts.” Students had to map out their stories from one scene in order to sequence to the next. Therefore, they organized their stories through a sequence of events and used this outline when working on the digital component of their projects. By breaking their stories into a sequence of events, students were able to visually see the flow of their stories and determine what worked and what did not. Storyboarding allowed students to create a narrative that flowed from beginning to end, and thereby complete their concepts. Figure 4-18 shows an example of a student storyboard.

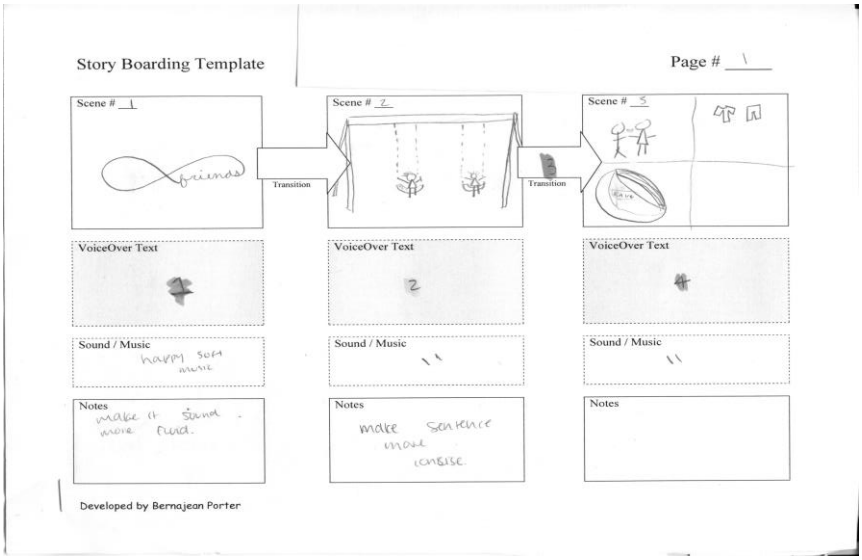


Figure 4-18. Student storyboard

A number of students used this storyboard space to reorganize their thoughts and to add or delete items from their written pieces. One student stated that she "saw things that made revisions easier than before" (Student Reflection 5). Within the rubric, sequencing and conclusions were addressed in the plot/organization category which had a final average of 8.45 out of 10; therefore, students were able to organize their essays in a logical sequence that also contained a complete conclusion that summarized their essays. Below are a few examples of sequencing within students' written work.

> My life was changed on an ordinary Monday morning in seventh grade when I agreed to go to a bible study with my friend. . .As I got older, life became messier. … Looking back on my experience, I don't know how I would have gotten through it without God guiding me. (Student Essay 6)

> Elementary school friendships revolved around coloring, making up games, dress up, and pigtails. Middle school was when friendships become a competition, unlike elementary school where I was just glad to have someone to walk in line with. . .Finally high school came around, where I have met a group of my closest friends. (Student Essay 12)

> There are many things in life that can be looked at as a guideline to life. For some people it may be school, for some it may be church, but for me it is baseball. . .For example, the starting point is in tee ball where the ball is sitting and is easy to hit. Then [you] work your way up to pitching machine and then to kid pitch and if you are lucky college and maybe even the pros. I believe my life is like baseball. (Student Essay 15).

All three of these excerpts are examples of sequencing because the sentences build upon one other and create a series of events create a narrative work. The following excerpts are examples of conclusions from student essays:

> A "No" could be your green light for you to start something better and new. Never allow it to slow you down because it is nothing but an opportunity. When one door closes, God opens another. With self-determination and motivation you can change any "No" into a positive situation. (Student Essay 2)

> Football teaches us a lot of things. It teaches young men discipline, determination, overcoming adversity, commitment, and other things that can help further you in life. I've built some of the best friendships through football because of the tough times that I've experienced and that brought the best out in me. (Student Essay 7)

> From the coal mines to the front line of the military field; from the baseball fields to the tennis courts; from the local barber shop, to the donut hole. Everyone comes together as a group or a family to work and accomplish a goal or a specific something and this is what I believe in being a true friend. Again I mention, don't blink, achieve the goal enjoying the good times. (Student Essay 10)

Each of these examples brings the narrative to a conclusion by summing up their main point and leaving the reader with an understanding of their essay's main point, which is a vital part of narrative writing and; therefore, contributes to standard 21. Students successfully created a sequence of events that led to a conclusion and a narrative piece of writing.

Senses. The senses criteria field assessed students' ability to develop rich ideas through the use of multiple senses. Standard 21d includes the ability to use sensory language to create a vivid picture in an essay. Based on rubric scores, the senses category was the weakest one in students' final artifacts. The average score within the senses category was 7.61 out of 10. Although students employed the use of some senses in their essays, students struggled with the use of multiple senses to describe their experiences or to move their stories along. Student descriptions within their essays relied heavily on two primary senses, visual and auditory. The following are examples of students that utilized visual and/or auditory senses within student essays:

> The tornado went right across her house. The top of her house was ripped off nothing was around her but woods, glass, cars, and other destroyed items. She thought she wasn't going to live and all she could do was pray and hope for the best. She described the sound of the tornado as a train. It was so loud her ears were ringing. The winds were so strong that she was not sure how she held on through that. (Student Essay 5)

> She followed me everywhere. She cried for me, and slept inside my head. She groomed me and was very talkative, and whatever was on her mind, you best believe she meowed. (Student Essay 9)
>
> I remember one day I was sitting in the lunchroom with my friend and I overheard a girl talking about another girl's outfit. (Student Essay 12)
>
> His shoes were very dirty and scuffed up. (Student Essay 14)

One student also included the sense of touch as he described how hot it was and how soaked with sweat he became during football practice, "I found out many things about my character by doing what I love, playing football. I remember like it was yesterday. It was a hot summer day, 90° or so. So hot I was drenched during warm-ups" (Student Essay 7). However, I observed that students made little use of senses beyond visual and auditory descriptions within their final drafts.

Overall, students met the writing standards during the digital storytelling unit. Students wrote about their own experiences using the "This I Believe" frame and included specific details to describe their beliefs. Additionally, students used sequencing to make their essays meaningful for the reader. The point of view of these essays was personal with a broad appeal. Since the topic was personal, the narrative speaker was clear, and the progression of ideas was natural. This narrative technique, along with the elements of the essay from the "This I Believe" format, made the essays flow easily.

Students merged their essays with videos to enhance both the tone and the meaning of the topics in their essays. Additionally, students used precise language and sensory details to make their beliefs come to life for the reader. This essay assignment compelled students to reflect on a powerful event in their lives that formed a life lesson

that they could share with others. Based on the requirements, standard 21, and its sub-standards, were adequately covered within the digital storytelling unit.

Production and Distribution of Writing Standards

The digital storytelling unit encompassed standards 22, 23, and 24 in the course of study production and distribution writing standards. Standard 22 states that students should be able to, "produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience" (Alabama Department of Education, 2010). Standard 23 addresses the ability to "develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience" (Alabama Department of Education, 2010). Finally, standard 24 states that students need to able to "use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information" (Alabama Department of Education, 2010).

Similar to the previous set of standards, I also observed positive results with the production and distribution writing standards. One student stated that this project allowed her to "present a whole project and was more interesting to view and present. And it wasn't boring" (Student Reflection 2). Furthermore, students had to complete a written piece before they could make a visual presentation. As noted by one student, "you really have to know what you're talking about or it will sound stupid."

For students whose writing was not yet complete when they started making their digital stories, they had to go back and revise their stories. Otherwise, their digital videos would not make sense. Thus, students were constantly revising their stories throughout this process in order to create a more cohesive piece of writing. Additionally,

these steps ensured that students' visual and writing projects were more polished. The criteria fields that addressed the production and distribution of writing standards were personal experiences, storyboard, and final production upload.

Personal experiences. The personal experiences criteria field assessed students' ability to incorporate personal experiences into their essays and to build an exposition that was organized and conveyed their main ideas, as instructed by "This I Believe" guidelines. Standard 22 focuses on students' abilities to write, develop, and organize their essays in an appropriate manner that was consistent with the style of writing. Therefore, the category in the rubric that was used to assess standard 22 included the previously discussed plot/organization category as well as the personal experiences category. The plot/organization category scored an average of 8.45 out of 10, and the personal experiences category from the rubric scored an average of 8.4 out of 10. Therefore, it was evident to me that students were able to develop a clear plot line through the use of personal experiences that met the desired purpose of the assignment.

Students used personal experiences in their narratives to create an exposition from real life experiences. Because the "This I Believe" format stated that the purpose of the essay was to reveal a core belief through real experiences, students' use of personal experiences in their essays satisfied this requirement of the essay. Below are a few examples of personal experiences from student essays:

> When I first started learning how to read in kindergarten, I did not catch on as fast as everyone else. I was told that I could not go to first grade unless I learned how to read. (Student Essay 2)

> One day in particular my faith in God was tested more than ever happened before. That day I watched my dad walk out the front door and knew he wasn't coming back. Feelings of abandonment and helplessness

> filled me as someone who I thought would always be in my life left me. My heart was broken. I found myself asking God why me? Why was he putting me through this? There was a part of me that was so angry with him. (Student Essay 6)
>
> Last September, one of my close friends then moved to a different state, was killed in a car accident because of a drunk driver late at night on the highway. At the hospital, before he passed away, I was talking to him. He was not able to speak too much so I tried to make the best of it and pass the time by laughing about the stupidest things, which seemed to work at the time. I feel that he and I ended our time together in one of the best possible ways. I believe that laughter heals. (Student Essay 19)

Each of these examples pulls from real life events from the students' lives. They describe the events, while also inserting how it made them feel and/or how they reacted. Therefore, these students were able to pull events from their lives and describe them in a manner that relayed their point to the reader.

Storyboard. The storyboard criteria field assessed students' ability to create a visual outline for their final projects and a roadmap for making any necessary changes. Standard 23 focuses on the ability to strengthen a piece of writing through planning, revising, and editing. Therefore, this standard was addressed in the storyboard phase, which provided students an opportunity to create a visual outline to see how the elements of the story would fit together as a final product.

Students used a storyboard template (see Appendix A) provided by Mary in this section of the unit. This template helped students decide what type of photo they would use, what narration would go with the photo, and what type of music they would use to accompany the photo. Through this process, students were able to see the sequence of events within their narrative and make any necessary revisions. One student commented that in this phase, "I saw more things and it made revising easier."

Based on the steps of planning, revising, and editing, the storyboarding category of the rubric was used to analyze standard 33. After I evaluated the 19 digital stories, the storyboard category scored an average of 8.16 out of 10. Students utilized the storyboarding phase to demonstrate a clear plan and to make revisions as needed to produce a completed final product.

Not all of the students were comfortable with drawing their storyboards and opted to complete their storyboards with written words. Regardless of preference (i.e., drawing vs. written words), I observed students completing revisions at the same rate in this phase of the project. Fourteen of the 19 (74%) students drew on their storyboards, while the remaining five students (26%) used words. Although different paths were taken, all of the students utilized planning, revising, and editing as part of the storyboarding phase. Figure 4-19 shows sections of a storyboard from a student who used words instead of drawings for his storyboard.

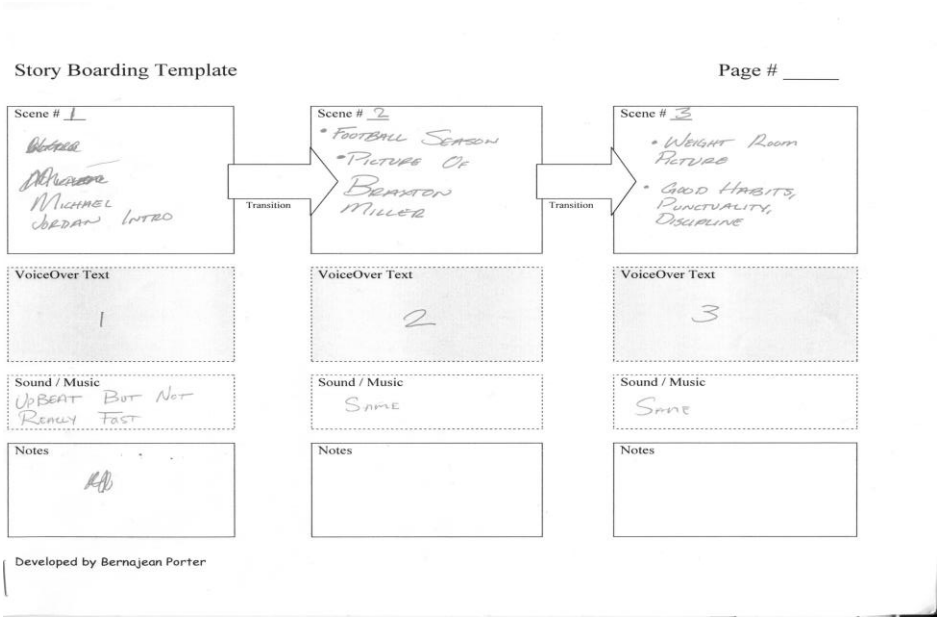


Figure 4-19. Student storyboard example without drawings

Final product upload. The final product upload criteria field addressed students' ability to export, upload, and share their final products with others. Standard 24 states that students need to be able to use technology and the Internet to produce and publish written products. Students were afforded several opportunities to interact with this standard. In creating their written pieces with Google Docs and another word processing program, students used technology and the Internet to produce written work.

In addition to sharing drafts with other students for feedback, students were required to submit their final versions via the school learning management system. All 19 students (100%) were able to complete this task. Furthermore, students used Google Drive or Toontube to upload and share their completed projects. For this rubric, the category of final product upload that addressed standard 24 was the highest rated area. Students averaged a perfect 10 out of 10 (100%) because all of the students were successful in completing this task. Therefore, students were able to successfully share their work through multiple outlets.

Since the project called for the teacher to serve as a facilitator, students were able to figure out how to share and upload their projects on their own. One student stated:

> The teacher didn't baby us. We had to figure it out on our own for the most part once we started. I think that will help with college because we won't always have a teacher or professor right there. I stressed at first but once you just do it it's better. (Student Reflection 7)

Although Mary was available for help when needed, I only witnessed two of the 11 students in the observation classroom specifically ask the teacher for help with uploading their products. Figure 4-20 shows an uploaded page in the iOS app for

Google Drive that students used. Figure 4-21 shows the share option within the same app.

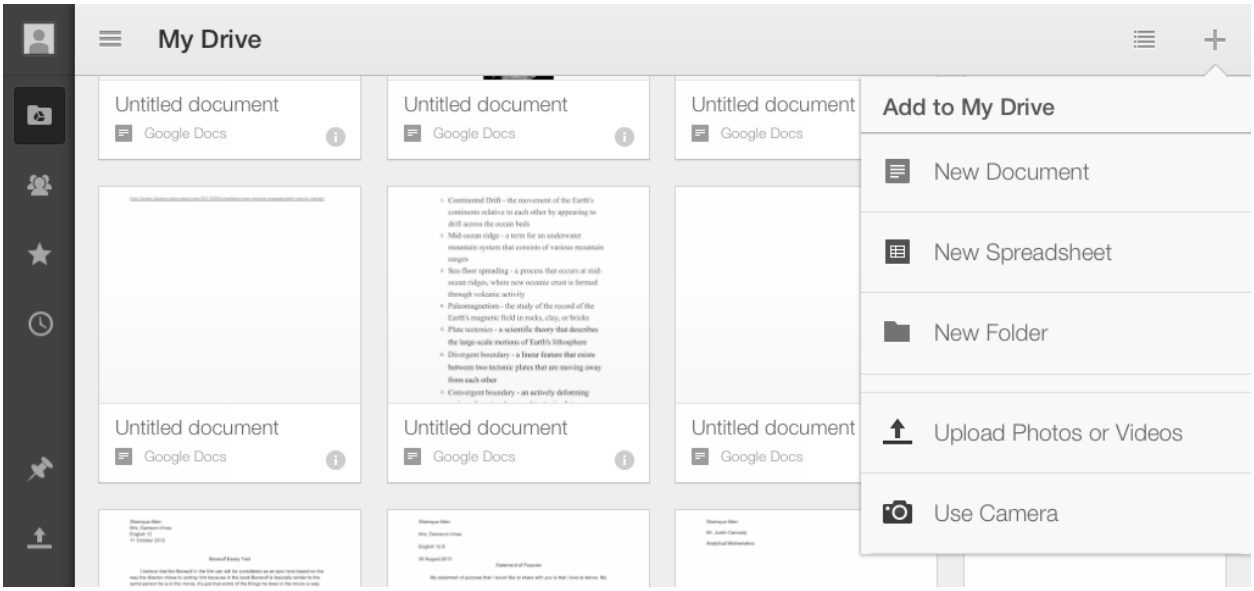


Figure 4-20. Screen shot of upload page within Google Drive app

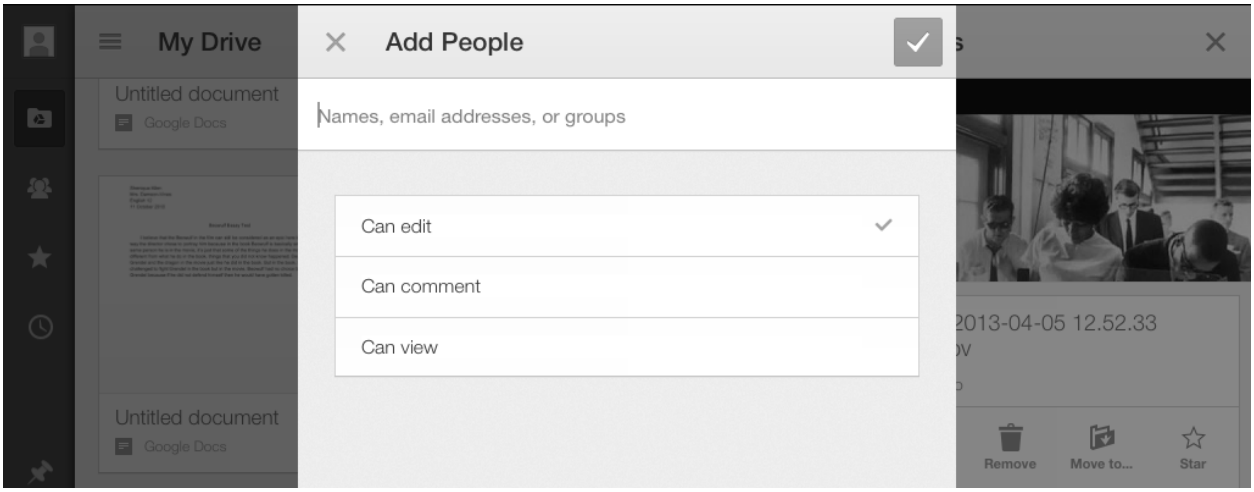


Figure 4-21. Share option within Google Drive app

Figure 4-22 shows the share option in the Toontastic application, which is how several students chose to share their digital stories.

Figure 4-22. Share option within Toontastic application

Technical elements. In addition to sharing digital stories, standard 24 was assessed in the technical elements category. In this category, students demonstrated their ability to use the technical elements of the program to create their products. The average score in the technical elements category of standard 24 was 8.26 out of 10. Therefore, students were able to demonstrate the ability to use different technical elements of the editing program to produce a completed final product.

This digital storytelling unit provided students with multiple opportunities to work on writing standards, including the production and distribution of their final products. The “This I Believe” format established specific criteria for students to follow in creating their essays, which in turn, made the process easy and straightforward for students to follow. In order to create digital products from their essays, students were compelled to plan, edit, and revise their essays multiple times. This iterative process helped students understand that without the written component, the visual piece would not be effective.

The audience for students' essays and visual products was their peers as well as students in other classes in which their digital stories were shared. Additionally, a number of students submitted their typed essays to the "This I Believe" website for possible publication. Thus, students had opportunities to produce and share their written pieces with others. For the categories that comprised these rubric scores, I found positive results with the production and distribution of writing standards.

Presentation of Knowledge and Ideas Standards

In the area of presentation of knowledge and ideas, the digital storytelling unit covered standard 33 which refers to the ability to, "Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest" (Alabama Department of Education, 2010). The criteria fields related to standard 33 included images, music, narration, final product elements/editing, and digital citizenship.

Images, music, and narration. The images, music, and narration criteria fields assessed students' ability to utilize deliberate choices to match the meaning and tone of the story and synthesizing them in the process. Standard 33 related directly to students' final artifacts. Students interacted with several types of digital media throughout the process of creating their digital stories including pictures, music, and narration. Categorically, rubric score averages were 8.29 out of 10 for images, 8.03 out of 10 for music, and 8.37 out of 10 for narration. Therefore, students demonstrated deliberate and justified choices regarding image and music selections. Students also recorded narration that sounded genuine and clear and used appropriate pacing in tone.

Final product elements/Editing. In creating their final products, students had to consider knowledge and idea elements individually and as whole and weave them

together to create a whole piece that was cohesive and told their stories appropriately. Students had to select images that would best relay the message of their essays, and they had to pair their essays with images. Additionally, students had to choose appropriate background music for the message and use a proper tone of voice during their narration.

For the creation of the digital component, students had to tell their stories through media. Therefore, they had to strategically choose which media to use and how to use it. In the rubric, the category of final product elements/editing considered how each element was woven together to create final digital stories, as articulated in standard 33. Scores were consistent across elements with an average of 8.13 out of 10. Therefore, students were able to create final products that blended together the elements of music, narration, and pictures to convey their main ideas and enhance viewers' understanding of their stories.

Throughout this process, students developed a concrete understanding of mood and tone and an opportunity to see and hear their words in new ways. One student commented that you were able to, "change the mood with your tone of voice because you are speaking and it's not just writing" (Student Reflection 10). Several students reflected on their music and image choices and noted that they matched these elements with the mood and tone they were trying to convey. Therefore, students were able to make appropriate selections within the media categories to fit their stories.

Digital citizenship. Throughout this assignment, students worked directly with multiple types of media and made planned and deliberate choices regarding these media to convey specific messages that would enhance their final projects. Mary

emphasized that students were expected to use technology and media components ethically. Therefore, this standard also covered the digital citizenship category from the rubric since students had to demonstrate ethical use of technology when creating their final videos.

The average score in the digital citizenship category of the rubric was the second highest, with an average of 9.13 out 10. Therefore, students demonstrated ethical uses of technology and photos as well as other media they encountered throughout the unit. Students were expected to use technology solely for the purpose of this unit and to keep a document citing the photos they used in their projects. I did not observe any of the students using technology inappropriately or unethically in their photo searchers or during the editing phase of the unit.

Language Standards

The language standards assessed in the digital storytelling unit were standards 35, 36, 37. The writing phase of the unit provided opportunities for students to work with these three language standards and their sub-standards. Standard 35 states that students need to be able to "Demonstrate command of the conventions of Standard English grammar and usage when writing or speaking" (Alabama Department of Education, 2010). Standard 36 addresses the ability to "Demonstrate command of the conventions of Standard English capitalization, punctuation, and spelling when writing" and also includes the ability to "observe hyphenation conventions" and "spell correctly" (Alabama Department of Education, 2010). Finally, standard 37 focuses on the ability to "Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening" and includes sub-standards that deal with syntax (Alabama

Department of Education, 2010). The criteria fields that addressed the language standards are mechanics/grammar and language categories.

Mechanics/Grammar. The mechanics/grammar criteria field assessed grammar conventions such as capitalization, punctuation, and spelling as well as mechanics such as flow and sentence structure. Standard 36 is concerned with students' ability to use correct English grammar conventions. Therefore, this standard was assessed through the written final draft using the mechanics/grammar category of the rubric. This criteria field was the second lowest average among the 15 sections within the rubric. The average score within this category was 7.89 out 10. Although this outcome is still a passing grade, students' final products contained errors in grammar conventions such as capitalization and punctuation. Students utilized spell check throughout the process therefore I did not observe errors in spelling in the 19 final products.

Punctuation errors, however, were the most prevalent and persistent problems in student writing samples. For example, student essays 2 and 12 contained comma errors. The following is an excerpt from student essay 2:

> Although I have been told *no*, the fear of being told it again sometimes prohibits me from doing what I planned, and that is not a good way to be. However I learned that being down is never really a bad thing. (Student Essay 2)

Student 12 wrote, "Friends come, and go all throughout our lives. Friends can last a lifetime, or can last a week" (Student Essay 12). Students also showed errors in capitalization, especially with the word "i" and other words at the beginning of a sentence. For example, Student 3 said:

> A gunship pilot I once talked to who was borderline suicidal, an alcoholic, but the advice he gave me was, "i know you're gonna serve and when you are serving your gonna wanna quit. don't I know your type when you get

> back to the world you're gonna miss what you use to do." (Student Essay 3)

Errors in capitalization would automatically correct themselves in Microsoft Word and most other word processing programs; however, Google Docs does not autocorrect capitalization or grammar. Therefore, students' familiarity with Microsoft Word autocorrecting these issues but unfamiliarity with Google Docs could be the reason that many of these errors occurred. Furthermore, sentence structure, especially sentence fragments, or incomplete sentences, were also an issue with essay mechanics, "Like I said before there will be signs given out by the dog that something or someone wasn't right. Like undernourished, abused, tired to a tree, or being in the yard all times" (Student Essay 4).

Finally, I observed flow errors with student essay mechanics. Flow errors included run-on sentences which is the combination of multiple sentences into one. Student 13 wrote:

> I don't mean to offend anyone who knows someone in the police force, but why does it seem that the ones who are being pulled over are the Hispanics, you don't hear about any other race being pulled over because they look illegal, if I had been born in Nigeria or Japan or any other place and didn't have my papers and didn't speak one word of English, they wouldn't pull me over and ask me for my papers they wouldn't take a second glance at me they would just be watching out for the Hispanics south of the border. (Student Essay 13)

Flow errors also included awkward sentences that disrupted the flow of the essay. For example, "The day my uncle passed away I remember like it was yesterday. It was about 7:30 at night I was sitting on the couch watching a movie, enjoying life" (Student Essay 18). Due to the fairly basic nature of these grammar errors, most can probably be attributed to laziness or lack of familiarity with the Google Docs word processing program and its inability to autocorrect.

Language. The language criteria field assessed students' word choices and types of sentences. Specifically, standard 35 addresses students' ability to use correct English grammar when both speaking and writing. Students had multiple opportunities to interact with standard 35 through both their written pieces and narration of their final digital stories. Therefore, standard 35 touched on both the language criteria field as well as the mechanics/grammar criteria field. As previously mentioned, the mechanics/grammar criteria field had a low average score and was an area in which students struggled. However, in this digital storytelling unit, students had to move beyond the written word and narrate their stories for their videos. In this way, students also worked with grammar usage for writing and speaking and comprised a portion of standard 35 of the rubric.

The average score within this category was 8.03 out of10. Therefore, students demonstrated the ability to use a variety of sentence structures and specific word choices within their essays. The narration phase was beneficial because students were not afforded many opportunities to speak in different situations. In this unit, students worked on voice inflection, pacing, and telling their story as well as speaking in a professional manner during their presentations. One student commented on the benefit of narration when she stated, "I think talking helped. Having to write it and then say it helped because we are so used to texting. It really made you hear it" (Student Reflection 13). I observed one student bragging about his ability to get through the narration in one take; however, most students were observed specifically re-recording sections of their narration because they were not satisfied with the way it sounded when

they played it back. Students wanted to get the narration “right” before submitting their final products.

Standard 37 addressed students’ abilities to understand how language functions in different contexts and to make appropriate choices within these contexts. When assessing the syntax of their digital stories, the language category of the rubric was consistent with previously posted scores with an average of 8.03 out of 10. Students had to understand what was appropriate for different audiences (i.e., formal and informal presentation).

Students recorded their own voices and could include inflection, emphasis, and dialogue when necessary; therefore, the video product was less formal than the written essay. Since students created their more formal written pieces first, they avoided common syntax mistakes they typically make i through editing and revisions. This process provided students an opportunity to practice speaking with thorough and well-developed sentences, a skill that students will need in real world situations and in the workforce in order to be successful.

Summary

Based on the evidence from this study, I concluded that new literacy skills and positive academic outcomes were evident during a digital storytelling within a secondary English 12 classroom. Students worked with and manipulated information and multimodal text using ICTs to create and share projects. Students located information for their projects as well as to solve issues that arose throughout the process. Students evaluated this information based on its usefulness within each situation. Although these were individual projects, the unit was social in nature, and students worked

collaboratively in multiple ways. Finally, I observed positive results on the academic outcomes of the unit in both their writing and their ability to create digital stories.

CHAPTER 5
DISCUSSION AND CONCLUSION

The purpose of this study was to identify the academic outcomes and new literacies evident during a digital storytelling unit within an English 12 classroom. In order to analyze these phenomena, the following research questions were used to guide the study: (a) In what ways, if any, are new literacies evident during a digital storytelling unit within an English 12 classroom, and (b) In what ways, if any, do students meet English 12 objectives related to the writing and language standards during a digital storytelling unit?

Data were collected through observations, reflections, and final student artifacts. Data analysis methods were described in Chapter 3, and study findings were described in Chapter 4. This chapter will discuss the findings, implications in the field, implications for the local context, implications as a practitioner-scholar, and implications for future research.

Summary of Findings

Finding ways to implement new literacies into the classroom may be difficult for some educators because implementation is a practice that veers away from traditional teaching methods. While it is not a one-size-fits-all solution, digital storytelling is an innovative method for bringing new literacies into the classroom. This study specifically identified several new literacies that were evident during digital storytelling unit within a secondary classroom. New literacies included: working with ICTs and multimodal texts, locating information, evaluating information usefulness, and engaging in collaborative practices. Furthermore, positive results were observed in both academic outcomes and unit objectives.

Students were given multiple opportunities to interact with ICTs and multimodal texts including different types of technology and uses of these technologies. Specifically, students interacted with ICTs while creating their digital stories, sharing their digital stories, and communicating with one another. To create their digital stories students used Google Drive and word processing programs to write, share, and edit written drafts before using iPads to create videos. Students found, saved, and edited photos using the Internet, a computer, and an iPad. Additionally, students coordinated their musical selections with narration to create complete digital stories.

Upon completion of their digital stories students interacted with ICTs to share their stories with the teacher as well as with the "This I Believe" organization. Students successfully completed these tasks. Students also interacted with ICTs through communication. Students struggled with using e-mail programs to communicate; however, they easily navigated the learning management system and Google Drive to communicate with one another. Students' lack of practice and interaction with e-mail led to this area of struggle among the students. Suggested revisions on how to strengthen this within the unit are located within the next section.

Students were required to locate information and evaluate the usefulness of this information for their projects. Additionally, students were expected to locate, evaluate, and gather materials for their videos. These tasks compelled students to solve issues that arose during the process by asking appropriate questions, finding correct information, and evaluating the usefulness of this information. For situations in which the answers did not work, students had to continue searching. Through this process students were able to solve problems and learn independently; thus, making the

learning more personal. Therefore, students were working within a project-based learning classroom and learning through authentic situations and hands-on activities (Anderson, 2010).

Finally, students worked collaboratively and shared knowledge throughout all phases of the project. They asked and shared opinions with each other and worked collaboratively to solve problems. Therefore, students were able to practice real world skills that will benefit them throughout their lives. These transferable skills transcend knowledge that can be tested with a pen and paper; these learning behaviors will help them work efficiently and effectively in modern society. As students work in authentic situations, they are able to learn in a manner that translates into a real-world context and allows them to interact with these skills in a way that will be far more beneficial to them than through traditional educational practices.

Furthermore, with an average final grade of 84%, students had a thorough understanding of unit objectives. Using the rubric that I created from the state standards, I analyzed each category individually. The criteria fields with the highest averages were the students' final product upload, digital citizenship, personal experiences, and plot. The criteria fields with the lowest averages were senses and mechanics/grammar. Students struggled to use descriptions beyond what they could see and hear and rarely included other senses such as touch, smell, or taste. This lapse could be due to the fact that most of the situations they used within their essays did not provide a lot of options with the other senses. Also, the use of Google Docs could have attributed to the lower averages in mechanics and grammar. Students rely heavily on Word Processing programs that automatically correct or at least point out

possible errors in mechanics and grammar. Google Docs only underlines spelling errors and does not automatically correct other errors like capitalization. The lack of these features could be a possible explanation for the lower averages in mechanics and grammar criteria field; however, these are skills that the students should know and should have been corrected during the revisions stage of the project. Pointing out this feature within Google Docs might serve useful during the process. Overall, results in each area were positive. Students were given the opportunity to advance their writing beyond a one-dimensional product that only the teacher sees to a multi-dimensional movie that they could share with their peers and the world. Students said that they enjoyed the project and worked harder on it than they usually would when writing an essay. Students tried new techniques and were engaged throughout the process, including presentations by other students. Therefore, the project was a success for on multiple levels.

Discussion of the Findings

The majority of students indicated that they enjoyed the digital storytelling unit. At the same time, they successfully met unit objectives. Because they enjoyed the project, students said that they worked harder and spent more time on it, which indicates a higher level of motivation. These results are consistent with the pilot study as well as previous research findings that associated digital storytelling with increased levels of student motivation and participation (Dogan & Robin, 2008; Moore-Hart, 2008; Sweeder, 2008).

This project was unique and different, as characterized by students converting their written work to a digital video format that incorporated pictures, music, and narration. By learning in a new way, students seemed less bored than they have been

with other, repetitive school assignments. One student stated that he thought it was a great way to "mix things up" and not just write an essay like usual (Student Reflection 1). The results of this study demonstrated that students interacted with new literacies by working with ICTs and multimodal texts, locating information, evaluating information usefulness, and engaging in collaborative practices.

Working with ICTs and Multimodal Texts

Students were provided numerous opportunities to interact with multiple types of ICTs throughout this unit. As new technologies make their way into the classroom, it is important that students understand how to use them effectively. Leu et al. (2004) argued that learning is not just a technology issue but also a literacy issue. Therefore, educators must integrate new literacies into their classrooms by allowing students to interact with ICTs to develop new skills while at the same time implementing a traditional curriculum. This current study found that digital storytelling was an outlet for fostering this new type of learning. Sadik (2008) reported similar results in a digital storytelling unit; student motivation and engagement increased, and students developed greater ICT skills.

Mary said that the biggest surprise of this research for her was students' lack of basic technology skills. In education, there is a general consensus that students are universally tech savvy. The findings of this research study, however, suggested that students are only savvy with certain types of technology. For example, students were extremely proficient with the technology they employed for personal use (e.g., social media, texting, gaming, apps).

With regard to professional uses of technology (i.e., emailing, organizing files), however, students struggled to use these technology tools appropriately. Findings from

this current research suggested that students need more practice with professional uses of technology. In education, educators may find it tempting to use technology exclusively for "fun," less-educational projects. However, students need to develop basic technology skills in building file structure (e.g., folder creation), proper titling of a document, and proper email etiquette (e.g., appropriate language and proper use of the subject field).

The proper use of email can and should be incorporated into technology-based units. Despite the fact that new literacies are vital to a student's success beyond high school, Wendt (2013) noted that many students lacked these skills. The author suggested "integrating literacy learning in the general curriculum at the secondary level with particular attention to content area literacy and technology integration" (p. 38). This type of literacy and technology integration was a primary goal of this unit; however, Mary overlooked the basics during the planning phase of this project. Technology skills could have easily been added to this digital storytelling unit, but she presumed that they were concepts the students already knew and could implement. Although students were able to develop and work with new skills throughout the duration of this process, educators cannot assume that students already possess the basic skills they need to successfully complete tasks involving technology.

Despite this deficit, students found ways to achieve their desired outcome. They used prior knowledge from their experiences with personal devices and applied it to this new learning situation. Students also found creative ways to solve problems and successfully created and shared their final products. When given the space and opportunity, students exceeded Mary's expectations. Students brought a tremendous

amount of creativity and energy to their projects and benefitted from the broad parameters of the assignment.

Locating Information

Locating information is an important new literacy for students to possess in order to work in modern society (Hagood, 2009; Leu et al., 2004). New situations arise daily that require people to locate information. American College Testing (ACT), one of the leading assessment companies in the United States, recently added a new assessment to their list of available services and solutions called "WorkKeys." According to ACT, locating information is one of the selected "WorkKeys" (2013). ACT has reported that the ability to locate information is a critical skill in the workplace and highly desirable by employers.

This current study found that digital storytelling provided numerous opportunities for students to practice the skill of locating information thereby producing an authentic learning opportunity. Instead of simply dispensing knowledge and having students practice locating information in isolation, this skill was incorporated directly into the project. Therefore, students were working directly within a project-based learning classroom (Anderson, 2010). Students experienced hands-on, authentic learning at a deeper level, thus, making the learning more meaningful (Carr & Jitendra, 2000).

Students expressed appreciation for the freedom to customize their own projects and to locate information and materials on their own, which fostered ownership and made the project more meaningful (Anderson, 2010; Sweeder, 2008). One student commented that a positive aspect of the unit was the "freedom to write about what you want" (Student Reflection 15). Today's students desire the flexibility to customize their own learning experiences. By allowing students to work independently, locate

information, and structure their project the way they desired, the unit created an opportunity for students to create personal projects that meant more to them than simple essays.

Students desired to try new things, and they welcomed the challenge as long as they could see the relevance of what they were doing. One student stated:

> I know I will have to use a lot of technology in the future, especially with the way technology is heading. A lot of times I would be frustrated during this project because the iPad or app would mess up. But I just kept working and it worked out, and it was good for technology in college and let's be honest everyone wants to be entertained. (Student Reflection 10)

Keengwe et al. (2008) noted that in order for technology integration to be effective, it must be meaningful and relevant. Most of the students in this current study found this unit to accomplish both of these goals. By giving students the freedom to work on their own and try new things, which appealed to students' desire for independence and sense of adventure, the project naturally led students to locate information.

Additionally, the unit allowed students to intuitively learn from and locate information in their own ways. Using multiple search methods, students identified strategies that were most conducive to their learning style. Robin and Pierson (2005) observed that allowing students to use technology on their own to work on authentic problems and projects made learning experiences more powerful. Students in this current study learned how to find new information, frequently through the process of trial and error. Consistent with the findings of Sadik's (2008) research, this personalized approach to learning made the learning experience more meaningful for students. Further, this practice of locating information using multiple methods reinforced the theme of endured learning, a concept all educators strive for within their classrooms.

Evaluating Information Usefulness

Once students located the information they needed, they had to evaluate its usefulness and determine if it was something they could use. If not, students were compelled to continue their search. According to Leu et al. (2004) and Hagood (2009), evaluating the usefulness of information is another vital new literacy. Furthermore, Anstey and Bull (2006) state that it is increasingly important that teachers allow students to interact with different types of texts in multiple ways as a starting point for meaning making and to help students to use their literacy identity, or past experiences as resources when they are engaged in literate practices. Therefore, students become empowered and create their own knowledge and solutions. The majority of time students spent evaluating information for this project involved evaluating the usefulness of an element within their project or evaluating information to solve a problem.

Students who completed this project spent time fully evaluating all elements of their project to ensure the quality of their final products. Students worked diligently to create final products for which they could be proud. According to Gregory et al. (2009), students are much more inclined to work hard to create a movie than they are to create a traditional composition piece. This was evidenced by the time that students took to evaluate each element of their projects. They did not simply select the first photo they found; rather, they searched for the “right” photos to fit their stories. One student stated simply, “I matched the images to what was being said in my story” (Student Reflection 6). Another student noted, “they [photos] went along with my story” (Student Reflection 7). Students searched for photos to fit their stories and evaluated the usefulness of these photos as related to their stories.

Furthermore, students carefully selected their music to fit the tone and mood of their stories and re-recorded their narrations if they were unsatisfied with all or part of it. One student described this process of selecting music by stating: “because it [music] fit the depressing mood of the story” (Student Reflection 19). Students viewed parts of their story multiple times to evaluate and ensure that each element reflected the highest quality. Because projects were multidimensional, they required students to evaluate the written piece as well as multiple elements of the process so that the project would work seamlessly together.

Students were motivated through this hands-on approach. Even though the project was rigorous, students were motivated to do the work because they saw the benefit to what they were doing. Students found the assignment to be more relevant and interesting than just writing papers for their teacher to read. One student stated: “making a digital story made it and the story itself more interesting and probably more interesting for the teacher to grade to [*sic*]” (Student Reflection 18). Another student stated: “I wish I had been introduced to this [digital project] before my senior year” (Student Reflection 2). To promote authentic learning, the research literature encourages students to be engaged in relevant tasks in order to develop an interest in this type of work (Churchill et al., 2008; Sylvester & Greenidge, 2009). The digital storytelling unit required more time and effort from students, but students demonstrated that they were willing to put forth the effort.

Today’s students are not shy about voicing displeasure with a classroom lesson that they do not connect with or do not see the value in doing. The question of “when am I going to use this?” has permeated the 21st century classroom. Several students in

this current study commented that they will likely use this type of technology or something similar to it in college. It is also likely that they will create another digital story before the end of the school year. Therefore, students saw the unit as relevant; it had a purpose and, therefore, was worth the extra time and effort they had to invest in the project.

Students not only had to evaluate information that was used in their projects, but they also had to evaluate information related to the process. For example, when students encountered a problem or issue, they had to search for and evaluate information in order to solve the issue or address the problem. According to Barrett and Wilkerson (2004), the ability to solve problems is important when creating digital citizens who are ready to live and work in society.

Interestingly, it is this same type of learning experience that frequently scares educators. Many educators are still intimidated by the use of technology because they see it as too difficult and problematic (Percy, 2003). However, when students encounter problems with technology, it provides them with an opportunity to work with several new literacies including asking questions, locating information, and evaluating information. When teachers fail to incorporate technology into their curriculum, they miss teaching moments and deny their students the opportunity to interact with this new literacy. Many classrooms fail to provide real-life problem-solving opportunities for students (Brown et al., 1989). Yet, this deficit persists in many schools. During this digital storytelling unit, students were faced with real world situations and were able to solve these problems on their own. Teachers do not need to fear technology because

students can locate and evaluate solutions on their own while interacting with new literacies.

Collaborative Practices

Collaboration among students was another new literacy skill that students experienced through this project. Literacy itself is communicative as a way to gather and share information. Students helped their classmates answer questions and learn new strategies that they had already encountered or learned as a result of the process. Students collaborated naturally without prompting from the teacher. Despite the individual nature of creating a digital story, many students worked with other students throughout the project. This finding is consistent with other research studies that also found digital storytelling produced a high degree of teamwork. Notably, teamwork is another ACT workforce development skill focus (Anderson, 2010; Barrett & Wilkerson, 2004; Johnson, 2009; Kieler, 2010).

It should be noted that most collaborative practice was the result of solving an issue with technology or program software. Although this process ultimately improved student projects because they were able to fix a problem, students did not collaborate to the same extent to improve each other's projects beyond asking for their opinion on different components. Therefore, this is an area that revealed itself for possible improvement.

Students provided feedback when another student solicited it or when it was a part of the unit through peer reviews. However, students did not ask for feedback often on the writing component of the assignment. Students were far more likely to seek opinions on the digital components of the project, including photos and music. Additionally, students seemed much more willing to provide criticism on another

student's digital piece than they were on a student's written work. This observation could be explained by students' comfort level and confidence with the digital components of the assignment as compared to their confidence within their own writing ability.

Regardless of the reason, students were able to learn from each other, which complemented the work of the teacher. Students tended to work with the student next to them or a student who was readily available. There did not appear to be any social or cultural implications regarding student interactions by gender, ethnic group, or aptitude. As students finished their own projects they began to help others as needed. If a student asked Mary a question and she was working with another student there was always a student willing to put down what he or she was currently doing to help. Students used their own experiences to help other students; therefore, life experiences informed literacy. Students used their past experiences as resources to engage in literacy practices. This further creates and forms the students' literacy identity (Anstey & Bull, 2006). Students generally attempted to resolve the issue on their own before asking a nearby student or Mary. The amount of time a student would work individually before asking for help varied from student to student; asking the teacher for assistance seemed to be most students' least preferred option for solving a problem.

Because digital storytelling uses authentic activities to implement the principles of constructivism (Sweeder, 2008), this type of cooperative learning method brought constructivist strategies into the classroom (Nanjappa & Grant, 2003). Additionally, Roschelle, Pea, Hoadley, Gordin, and Means (2000) noted that the use of project-based learning along with technology provides an opportunity for students to learn

constructively. By allowing students to interact with one another and construct their own knowledge through authentic learning situations, students were engaged throughout the process with the content and with each other to construct unique meaning (Carr & Jitendra, 2000; Johassen et al., 1999). When educators use a constructivist model in their classrooms they are supporting deep learning opportunities (Barrett, 2006). Therefore, by allowing students to work collaboratively and create their own knowledge, students were able to make a personal connection with the content in meaningful ways.

Academic Outcomes

When evaluating a unit or new instructional implementation it is also important to evaluate unit outcomes. It would be disingenuous to describe a digital storytelling unit without also reviewing students' final digital stories. Rubric scores indicated that unit objectives were evident in students' final products. Furthermore, students processed the information throughout all phases of the unit, and were deeply committed because they knew that the final product would be shared with their teacher as well as their peers. Meadows (2003) suggested that the strength of digital storytelling lies in its ability to be shared with others.

As previously discussed, the unit brought together new literacies, such as locating, evaluating and communicating information, as well as, infused authentic learning situations into the classroom. At the same time, it also addressed traditional curricular objectives. Throughout the process students were able to blend traditional content with new literacies by writing an essay and producing a complete video product with narration, music, and pictures. Eskrootchi and Oskrochi (2010) proposed that this combination of traditional and modern literacies complete a project-based learning unit.

One of Mary's fears about implementing this unit was that traditional objectives would be overshadowed by fun and exciting digital components of the unit. This is a common fear among teachers with this type of unit (Percy, 2003). In this study, the digital component enhanced the project while still being grounded in traditional writing and language objectives as students created a written component before the digital piece. According to Tan and Guo (2010), the ability to use new technological tools in addition to working with traditional literacies is the new idea of literacy.

Technology issues seemed to be the greatest weaknesses identified by the students and Mary; however, once fully evaluated it was determined that the technology challenges often produced valuable learning opportunities. When the technology failed, students were compelled to operate in a real world situation. This unit demonstrated that things do not always work the way we expect them to within our daily professional lives. Students were required to search, locate, and implement a response. Therefore, even though many students identified technology problems as the greatest weakness of the project, most students and Mary still found the project to be worthwhile. Similarly, Sadik (2008) found that teachers liked digital storytelling despite any observed drawbacks because it developed student understanding. In this current study, students successfully fulfilled the unit objectives; thus, the unit was worth the time and energy of planning and implementing it.

Finally, students worked in a real world context and, ultimately, shared their projects with others outside of the classroom. As such, students communicated with a significantly larger audience than just their teacher and classmates by submitting their essays to the "This I Believe" organization. This project represented an authentic

learning opportunity for students; one that resulted in a number of academic outcomes within the written objectives within the course of study. The findings of this study suggested that digital storytelling is a viable implementation tool to incorporate new literacy skills in authentic learning situations. Therefore, the educational mindset is changing with regard to how teachers must incorporate technology into their curriculum.

Implications for the Field

Creating college- and career-ready students has become essential in education to pave a path of success for our students. Yet, many educators are still unwilling to adapt their methods of teaching in order to incorporate new literacies (Connor & Sullivan, 2012). As a result, many colleges and workforce leaders contend that students do not possess the new literacy skills needed to be successful, such as locating information and working together. The literature on new literacies recognizes a need to continue teaching traditional literacies, such as reading and writing, but notes that modern students will also be required to navigate beyond these traditional literacy skills and communicate in new ways through innovative technologies (Leu et al., 2004; New London Group, 1996). By implementing a project-based unit and moving to a student-centered constructivist classroom, educators can address these new literacies while still engaging students in traditional literacies (Eskrootchi & Oskrochi, 2010; Heo, 2011). Based on this study, the following implications for the field were found:

- Positive student gains in motivation and content mastery warrant more project-based learning such as digital storytelling;
- there is a need and benefit for student acquaintance with multiple technology platforms (e.g. iOS devices, Chromebooks, PCs, mobile iOS and Android devices, etc.);
- the creation of a centralized library of resources for teachers to access as they plan a digital project-based unit would be extremely beneficial;

- Teacher assumptions should not be made regarding students' technology skills such as emailing, file sharing, file naming, etc., but instead lessons should be intentional and provide orientation, training and practice in such fundamentals;
- there is a need to explore ways to expand students' literacy experiences;
- an emphasis and value needs to be placed on peer editing as a critical collaborative skill set.

Results Warrant Digital Storytelling Units

Based on the findings of the study, digital storytelling can be an effective tool for implementing new literacies in the secondary classroom without sacrificing academic outcomes. Students were motivated and engaged during the unit, and they enjoyed working on this unit because of the hands-on nature that allowed them to interact with the content and new skills and literacies. Therefore, the first implication for the field is that student gains in motivation and content mastery warrant more project-based learning such as digital storytelling. This assignment required time and planning, but the benefits made it worthwhile.

Multiple Technology Platforms

With the growing number of iOS applications and basic editing programs, like movie maker and iMovie, teachers can implement digital storytelling without the fear of using the technology. Most of these programs and applications are intuitive, and there are a number of online tutorials for teachers and students to use as resources. Even if a teacher is uncertain regarding his or her own technology skill level, students can frequently find a way to locate the answers they need to solve problems on their own. Therefore, teachers can implement a digital storytelling unit as long as they have time and access to the necessary technology, including a few computers, iPads, iPhones, iPod touches, and/or android devices.

Both Microsoft and Macintosh now provide free video editing software pre-installed on their computers. Additionally, iOS and Android both offer free editing applications that can be installed on their devices like the one used with this project, Toontastic. The iMovie iOS application, also used in this unit, was easy to use and produced professional looking videos; however, there was cost for this program. Despite the cost, it is still a recommended solution for schools that use iPads to create multiple video projects. With the growing number of hardware and software products on the market, student interaction with multiple formats will become vital in modern society as students graduate and have to adapt in the real world. Therefore, the second implication is the need and benefit for student acquaintance with multiple technology platforms.

Library of Resources

If educators are still leery, the literature provides a step-by-step outline for implementing a digital storytelling unit through the writing, pre-production, production, post-production, and assessment phases. A more detailed description of best practices for each of these phases is provided in Chapter 2. I found that these best practices led to positive results. By understanding and following best practices in the literature, teachers can avoid many of the problems that can arise when implementing a project of this complexity. These resources are scattered; therefore, a centralized library of how-to videos, supplies needed, and best approach for workflow of the project would be helpful for many educators. The Center for Digital Storytelling is a great starting point and provides some good information; however, this site is expansive and can be hard for teachers to find the specific information. Therefore, the third implication is the creation of a library of resources specifically for teachers to access and walk them

through the process as they plan and implement a digital project-based unit would be extremely beneficial.

Technology Assumptions

Students in this study struggled with basic technology use. Mary did not include practice within the unit for e-mailing or saving or sharing documents in traditional ways. She did not implement these skills because she believed with the students' continuous use of technology in their daily lives that they would already possess these skills. This, however, was not the case. Therefore, the next implication for the field is that assumptions should not be made regarding students' technology skills such as emailing, file sharing, file naming, etc., but instead intentional measures to provide orientation and/or training and practice in such fundamentals.

Expand Literacy Experiences

The results of the study showed that new literacies were evident during the digital storytelling unit; however, there were areas that still needed to be further developed. One main concern was the formal use of technology for organization and communication. Students needed to understand how to organize their files and perform basic tasks like saving, moving, titling, and locating a file or folder. Furthermore, students needed experience with other real word technology uses, such as e-mail. Not only do students need experience with how to actually use e-mail, they also need to understand proper email etiquette and acceptable language to use within e-mail. Technology skills have become increasingly important in modern society; therefore, students must obtain and continue to practice these skills in order to be marketable in the future. Times are changing, but technology is changing even faster. Students recognized this reality and expressed appreciation for Mary's attempt to move in this

direction. Therefore, there is a need to explore ways to expand students' literacy experiences.

Need for Collaborative Skills

The ability to work together and collaborate effectively is an important skill in the 21st century. The results of this study found that students collaborated in a variety of ways; however, more direct interaction with purposeful collaboration is needed. Students collaborated naturally on solving problems and asking opinions; however, students will need to be able to work collaboratively on specific situations for a variety of reasons and purposes within the workforce. By creating purposeful opportunities for students to work together on a specific task, students will interact in real world situations. A specific area in which to accomplish this is through peer editing and the ability to provide feedback. Providing opportunities for students to practice giving and receiving constructive criticism beyond the one time utilized within this unit will provide a valuable opportunity for students to practice this new literacy. Therefore, the final implication for the field is that an emphasis and value needs to be placed on peer editing as a critical collaborative skill set.

Implications for the Local Context

There are several implications that relate to the local context in which this study occurred. The findings from the study were positive in both new literacy implementation and academic outcomes. Thus, digital storytelling proved to be a viable option for this local Alabama school to implement the new state standards as part of creating college- and career-ready students. The following are the implications within the local context:

- The school should create cross-curricular project-based learning units should be developed.

- the school should seek to build a robust inventory for access to multiple devices and platforms;
- the school should seek to establish a robust infrastructure to support the number and kinds of devices and the kinds of tasks that could challenge bandwidth;
- the school should implement instructional technology professional development led by practicing teachers with success stories and other technology leaders with an emphasis on best practices;
- the school should implement an articulated technology curriculum for students to develop and practice basic skills in word processing and digital communication for professional use;
- the school should seek to create parent awareness that deepens their understanding of this digital shift in educational practices as an additional layer of support for new instructional practices.

Cross-Curricular Units

A recommended next step for this school would be to consider cross-curricular projects. The school in which this study was conducted is a proponent of multiple content collaborative projects. In fact, some classes, such as government and economics have already been combined into one class period in which students attended one class on Mondays and Wednesdays and the other on Tuesdays and Thursdays with courses rotating every other Friday. These courses would be an appropriate starting point for the school to consider in using digital storytelling to create interdisciplinary projects. Additionally, this cohort of teachers are already familiar with working together; thus, they would already have a level of comfort with one another to create the project and could plan during their collaboration time which was already set aside during the school day.

Although each project would need to be adjusted to fit each individual implementation, the findings of this study showed that the benefits of digital storytelling or other digital projects reached beyond a specific implementation. Although both the

pilot study and the current study took place within English 12 classrooms, the units were different. The benefits, however, remained the same. By following the general best practices for implementation, digital storytelling units could be individualized for each classroom, moving beyond only creating stories to doing other types of digital projects. Although the students creating these cross-curricular projects would not be creating digital stories, but rather digital projects, they would still be able to work with the same new literacies. Therefore the first implication within the local setting is that cross-curricular project-based learning units should be developed.

Technology Inventory

The school has the needed technology to implement digital storytelling in more comprehensive ways. Every teacher in the school was provided a laptop and every department has access to several laptop carts for students. Furthermore, the school has several iPad carts available for teachers to check out and use directly in their classroom. Finally, as noted in this study, several students took advantage of the school's BYOD (bring your own device) policy that allowed students to bring in personal computers and mobile devices to use throughout the school day. Digital storytelling could easily be implemented throughout the school based on its abundance of digital devices, and, as previously mentioned, students will need to work with multiple platforms in order to become familiar with different devices and functions. Therefore, the school should seek to build and maintain a robust inventory of access to multiple devices and platforms for the growing population of students.

Infrastructure

Another implication that comes with implementing more digital units is the school's infrastructure. As teachers begin to implement these types of units, the

additional strain that will be placed on the schools infrastructure will need to be addressed by the IT department at the school. As more devices attach to the network, the technology department needs to be prepared to handle any problems that may arise quickly and efficiently. Being able to have access to the Internet and other online resources is crucial for these types of units; thus, it is important to assess these needs in advance to avoid hindering the projects once implemented. Therefore, the school should seek to establish a robust infrastructure to support the number and kinds of devices and the kinds of tasks that could challenge bandwidth.

Professional Development

One area that would need to be addressed in order to implement digital storytelling and/or digital projects is teacher technology professional development. The school currently has teachers attend "Technology Thursdays" twice a month during their support period. However, these sessions are primarily dedicated to demonstrating new technologies. While teachers with advanced technology skills and teachers who have a desire to use technology find these sessions to be interesting and helpful, many teachers are still confused about how to actually implement these new technologies. Therefore, this time should be utilized to inform teachers about best practices in digital storytelling and project-based learning units. The utilization of best practices appeared to be key factors in the success of both the pilot study and the current study. By helping teachers stay abreast of current technologies while also demonstrating best practices of use, each teacher would form a better foundation from which they could grow and use technology more effectively in their own classrooms. Therefore, these sessions need to make a shift from how-to sessions to being based in professional development best practices.

Professional development is the go to method for learning within a professional context and is the foundation of change in education (Hall & Hord, 2011). Therefore, professional development is vital to implementing new digital projects. According to Desimone (2011), professional development provides opportunities for teachers to not only gain new knowledge and skills, but also to improve their practice and grow personally and professionally. The school in which this study took place is already on the right path by providing situated professional development for it's teachers, because it allows teachers to learn in a non-threating environment in which they are comfortable and makes it easy for teachers to quickly implement these new ideas (Borko, 2004; Fullan, 2010; Guskey, 1986). Furthermore, it is site based which has shown to be more successful than district-wide professional development (Guskey, 2000). However, according to Desimone (2009) and his five critical features of professional development, which include content, focus, active learning, coherence, duration, and collective participation, the school is not currently following the best practices of implementation. Therefore, the school should shift its focus to best practices of implementation creating a teacher-centered, hands-on form of professional development. This model closely resembles the best practices of project-based learning and moving the learning to more authentic situations.

In order to help move in this direction, these sessions could be led by teachers who have had success in the classroom implementing these types of units. Involving teachers from the beginning will allow them to make a connection with the material and the process (Lieberman & Miller, 1981). Furthermore, this provides an opportunity for teachers to learn from other implementers that can speak from personal experiences

(Fullan, 2010). This also will allow for the professional development sessions to be dynamic and customized to the fit the needs of the school, which is an important factor for success according to Guskey (2000). Therefore, instructional technology integration professional development led by practicing teachers with success stories or other technology leaders with an emphasis on theory and unit set up instead of technology how-to lessons would be beneficial to the school. The technology support staff on a need basis can answer specific questions on how-to to use the technology or teachers could use the many resources previously mentioned to find the answer on their own. Therefore, theory will guide the professional development and it will change to a constructivist model in order to promote behavior change.

Technology Curriculum

Based on the results of the study, students need more basic instruction on using technology for professional use. The International Society for Technology in Education (ISTE) has created a set of technology standards for students that teachers need to be informed of and trained on to allow them the best opportunity to implement these standards into the classroom (ISTE, 2007). Students struggled with e-mail and other forms of technology use that they do not use within their daily activities. The students felt comfortable with finding answers about technology and enjoyed working to create the video; however, they did not want to work on their file structured and would rather text than e-mail. Therefore, a need for implementation of an articulated technology curriculum for students to develop and practice basic skills in word processing and digital communication for professional use is warranted. This updated technology curriculum would provide students an opportunity to interact with these professional uses of technology that they avoid or do not encounter during their daily technology use.

Specifically within the context, I came up with some suggested revisions to strengthen the unit. These revisions are based on areas in which students struggled or could use more practice and/or interaction. These areas include the use of e-mail, proper file structure, and proper search techniques.

Students struggled with the use of e-mail. Therefore, additional measures to provide real world experience with e-mail and other forms of communication would be beneficial to any digital unit. Adding e-mail and modifying the unit to include practice in these areas would provide hands-on opportunities with new literacies that students will need in the real world. Some ways to add e-mail to the unit would be to have students e-mail their paper to another student for a second set of peer revisions. Students could then interact with e-mail again when returning the paper. Therefore, this solution provides an opportunity for students to interact with additional new literacies. Students would work with new Word Processing features, such as comments and/or track changes, downloading an attachment, uploading an attachment, and proper e-mail etiquette. Therefore, this addition would be beneficial as it would not be cumbersome to add to the unit but the outcome may provide several benefits.

Students also struggled with developing and maintaining an organized file structure during the digital storytelling unit. Revising the unit to include a lesson on proper file structure and a teacher check up on their current file structure would allow students to begin to create good file and document habits. In the real world, being able to properly save, name, and move documents is an important skill. Many work environments do not allow time to search for a document. Therefore, being able to use

proper file structure is an important new literacy that will prove beneficial for the students' future both in college and the workforce.

Finally, although students worked extensively with the Google search engine, their searches could be more efficient and according to Leu et al. (2004) speed counts. Students need to be able to locate, evaluate, use, and communicate that information in a quick and efficient manner (Leu et al., 2004). Therefore, adding a lesson on proper search technique would be beneficial for the students both within this project and in the real-world.

All of these revisions will take minimal effort and time by the teacher, and the benefits outweigh the effort and time needed to implement them. Being able to communicate over e-mail, properly save and find documents, and search effective and efficiently are skills that are utilized daily within the real world. These are vital new literacies that can be worked seamlessly into a digital storytelling unit. Adding a lesson on these skills would allow the students to interact with new literacies in a purposeful manner that would make students more competent in modern society.

Parent Awareness

As previously mentioned, the local context of this study involves a tight knit community. Parents are very active within the school and keeping them informed is vital to the success of any change within the school. The school prides itself on tradition and this sometimes can lead to a lack of change and doing things as they always have been done. Therefore, an implication for the local context is a need for parent awareness that deepens their understanding of this digital shift in educational practices as an additional layer of support for new instructional practices would prove beneficial. In order to do this, parents need to be educated on the changes within the school in a

manner they are comfortable with and is non-threatening in nature. This process needs to be implemented slowly and intentionally. One possible method would be to approach the parents in a setting they are comfortable, such as athletic events. Parents in this context attend multiple athletic events a week and are more than willing to talk school matters during these events. This would provide an informal background for these conversations; therefore, they could be casual and tailored for each set of parents. Although this process would take time, the outcome is worth the time invested. By creating parent awareness, the school would be proactive instead of reactive which leads to greater results when dealing with change, especially in a community that is hesitant to change.

Implications as a Practitioner-Scholar

After the data were analyzed for this study, the findings of the pilot study were further reinforced. Similar to the pilot study, the majority of students enjoyed working on this project. Students indicated that they had fun playing with the program features and figuring out how to add visual and audio effects to their projects. Multiple students also commented on the freedom they were given to choose their own topic. Students found this project to be more than just a grade and wanted their project to be outstanding when shared with the class and others. One student commented:

> Working with technology is always good because even if in the future you aren't working with the exact same program or type of technology, you will be more comfortable with how technology programs work and they all have a similar way of doing things. (Student Reflection 10)

Another student said that he was "grateful for the opportunity" because he did not "have technology at home" and he enjoyed creating this project on an iPad (Student Reflection 11).

It should be noted that not all of the students were enthusiastic about the project. Although most students had a positive experience, there were some students who were more excited than others. When asked about what he did not like or what he felt were weaknesses of the project, one student responded that the assignment was too much work. Another student identified time constraints as the greatest challenge. This project had similar levels of student engagement and motivation as the pilot study, but it also was able to utilize new literacies within the unit.

As a practitioner-scholar, I found the findings may lead to additional areas of work. The New London Group (1996) created a new framework of literacy over 15 years ago in which members called for a redesign of literacy pedagogy. Although they did not provide practical classroom applications, The New London Group set the stage for subsequent scholars, such as Gee (2003), Leu et al. (2004), and Hagood (2009) among others, to build upon these ideas and to provide specific examples for educators. The New London Group (1996) called for literacy practices to become more relevant to the wants and needs of 21st century students so that they could survive in the real world and modern workforce. Based on these results and the previously discussed implications for the local context, the following implications as a practitioner-scholar were revealed:

- To serve as a change agent for a shift to implement new literacies;
- to change the focus of professional development for teachers in regard to instructional technology integration by showcasing success in digital lesson strategies for teachers;
- to create a culture shift to move beyond comfort zone to new and more engaging practices.

Change Agent

Although a new literacy pedagogy was illuminated by the New London Group in 1996, educators are still leery about implementing new literacies in the classroom; changes toward this new pedagogy appear to be extremely slow moving. The findings of this current study revealed that new literacies were evident during a digital storytelling unit. Additionally, students possessed the ability and desire to learn most of the technology on their own. Therefore, I hope this research will help others make a shift towards implementing new literacies without alienating teachers who are uneasy about their technology or bound to their current teaching styles. In order to become a change agent, I need to begin a culture shift by advocating for these types of lessons, informing others of the success from both the pilot study and the current study. This will begin to create positive impressions on these types of units and allow teachers to become more open to the idea of implementing them within their own classroom.

When looking at making changes within the school context, there needs to be a focus on innovation (Hall & Hord, 2011). Innovation deals with a school or organization implementing new ideas or products (Damanpour, 1987). This process is not an easy one as teachers can be resistanct to these changes; however, teacher reluctance can be managed (Folger & Skarlicki, 1999; Dent & Goldberg, 1999). To begin to make this type of change within my professional practice there are two related areas that need to be addressed and researched. Professional development can be helpful in this area and further research on culture change would be beneficial to helping me become a change agent within my school (Ertmer, 1999).

Professional Development

The first area that will help me become a change agent is professional development. By examining different professional development models and best practices, I hope to change the current views of technology training among the teachers and create specific goals with a more focused plan for attaining those goals within my context. According to Desimone (2009), professional development is able to shift teacher attitudes and beliefs by expanding their knowledge and skill set. Therefore, professional development can alleviate current teacher frustrations and confusion within the current model of technology training. Guskey (1986) found teachers are more likely to implement innovative practices when they are afforded opportunities to observe other teachers successfully implementing such practices. Therefore, I hope to be able to change the focus of professional development in regard to instructional technology integration by showcasing practicing teachers' success within digital lessons.

Beyond the pilot and current research, I must review the best practices of professional development in creating a culture shift among teachers. According to Hall and Hord (2011), change is not possible without professional development and Desimone (2011) similarly believes that it is vital in order to promote teacher change and advancement within the classroom. Based on my experiences within two different classrooms and two different units, I am confident with my ability to directly address teacher fears. With the right professional development model, I believe I could make an impact in creating a culture shift within my professional practice and local context.

Culture Shift

The second area relates to creating a culture shift. When considering this type of shift, schools need to understand look directly at research on innovation and change

(Rogers, 2003). Although there are several models for innovation and change, Roger's (2003) Theory of Diffusion of Innovation appears to be a model that would fit well within my local context as a practitioner-scholar. This model focuses on the process of innovation adoption within a social system and is made up of five different stages including knowledge, persuasion, decision, implementation, and confirmation. However, it focuses heavily on the implementation stage.

There are significant questions related to this specific goal including how to encourage teachers to venture outside or their comfort zone and try new things as well as how to foster buy-in from teachers who are reluctant to change. These are questions that I believe need to be addressed within my work as a practitioner-scholar. Both the pilot and current study revealed positive results regarding the use of digital storytelling at the secondary level. The next step is to take these results to teachers who might not be as receptive to trying new things as Mary from this current study or Susan from the pilot the study. Therefore, the first implication related to culture shift is to move beyond our comfort zone in order to create new and more engaging lessons within our practice. This then creates a follow up implication that we must then consider addressing the need for a culture shift for students. Because some believe this type of lesson is time consuming, which can translate into meaning it requires more active participation of the student because of the need to creatively produce something unique, I must also explore the students role within a culture shift. Furthermore, as previously mentioned, this also needs to be addressed within the parent community. In order to create a true culture shift I will need to consider all angles including school employees, students, and parents. There are several different change theories, but they all involve an

effective/personable leader, making a compelling argument for the change, getting community buy-in, empowering others to effect the change, and continuing support for the change (Hall & Hord, 2011; Rogers, 2003). Therefore, professional development and change should center on content focus, active learning, coherence, duration, and collective participation (Desimone, 2009). As a practitioner-scholar, I need to dive further into these theories and best practices in order to become a change agent within my local context.

Implications for Future Research

This study examined new literacies and academic outcomes evident during a secondary digital storytelling unit. Although the concept of new literacies is not new to education, it is certainly becoming more prominent due to the nature of common core standards and, for the purpose of college- and career-readiness, the adoption of these standards by many states across the county. Therefore, it is imperative that research on new literacies continues in order to inform classroom implementation while also providing evidence and support to educators who are interested in implementing new literacies in their curriculum. In order to advance the field of new literacies and digital storytelling there are several areas that would benefit from field-based research. The following implications for future research are suggested:

- a larger and more stratified population for generalizability of the findings;
- more study on the secondary level;
- uncover the factors that contribute to teacher reluctance;
- balance the above thought with researching strategies that would adequately address the reluctance factors among teachers;
- deeper evaluation of academic achievement within project-based learning units;

- determine digital storytelling's effectiveness within different subject areas.

Generalizability

This study was conducted with one teacher and her two regular English 12 classrooms. In order to gain a better understanding of new literacies, future researchers are encouraged to conduct studies with a larger population pool. A larger population pool from multiple classrooms, including multiple grade levels and different geographical locations, would ensure that the results could be generalized across multiple areas and situations. Diverse settings would also increase the transferability of the study results. Therefore, a larger and more stratified population needs to be researched for greater generalizability of the findings.

Digital Storytelling at the Secondary Level

Another area for potential research involves the challenges associated with implementing digital storytelling within the secondary classroom. Currently most of the research studies were conducted within a primary or higher education classroom, research on digital storytelling and new literacies at the secondary level is still needed. Due to the age difference and classroom differences, the challenges that face students and educators are not consistent; therefore, the results of the studies within a different educational level do not always translate well within the secondary classroom. Consequently, future research in this area is needed.

Teacher Reluctance

A challenge that does appear to transfer across all levels is teachers' reluctance to implement technology or larger scale projects that utilize technology. Although research already exist in this area, the ever-changing nature of instructional technology and teachers continuing reluctance calls for continuing research in this area specific to

each context. Ertmer (1999) splits reluctance into two different types of barriers, first-order and second-order barriers. According to Ertmer (1999), first-order barriers are extrinsic and deal directly with things outside of the individual, such as monetary barriers. Second-order barriers are intrinsic and deal directly with things inside the individual, such as beliefs. Therefore, future research would also be beneficial regarding ways in which school administrators and technology support specialists could encourage and motivate teachers to move beyond these barriers and try something outside their comfort zone. The challenges these administrators face in relation to their teachers' fears and apprehension to implement digital storytelling and how they deal with those challenges, successfully or unsuccessfully, is an area that could also be explored.

Reluctance Factors

An implication related to the teacher reluctance previously mentioned is the need for researching strategies that would adequately address the reluctance factors that affect teacher implementation. This includes what factors play into their reluctance and factors that come into play to help them overcome that reluctance. As the educational community begins to make the shift from traditional instructional methods to implementing new literacies understanding teacher reluctance and the factors that contribute to and address that reluctance will provide to be vital information in the success of schools to be able to make that shift.

Academic Achievement

The topic of academic achievement could also been investigated at a deeper level. This current study focused on the new literacies evident as well as academic outcomes; however, these outcomes could be expanded upon. Until education moves

away from high stakes testing, future research on academic achievement will always be needed.

Subject Areas

Finally, digital storytelling has been utilized within other subject areas; however, its main use remains in the English classroom. Evaluating the use of digital storytelling in other subject areas is needed, especially at the secondary level. This current study could lead to research on interdisciplinary projects through collaborations among multiple subject area teachers in cross-curricular experiences for students. With the growing number of schools providing technology for their students, the need for digital storytelling research is apparent.

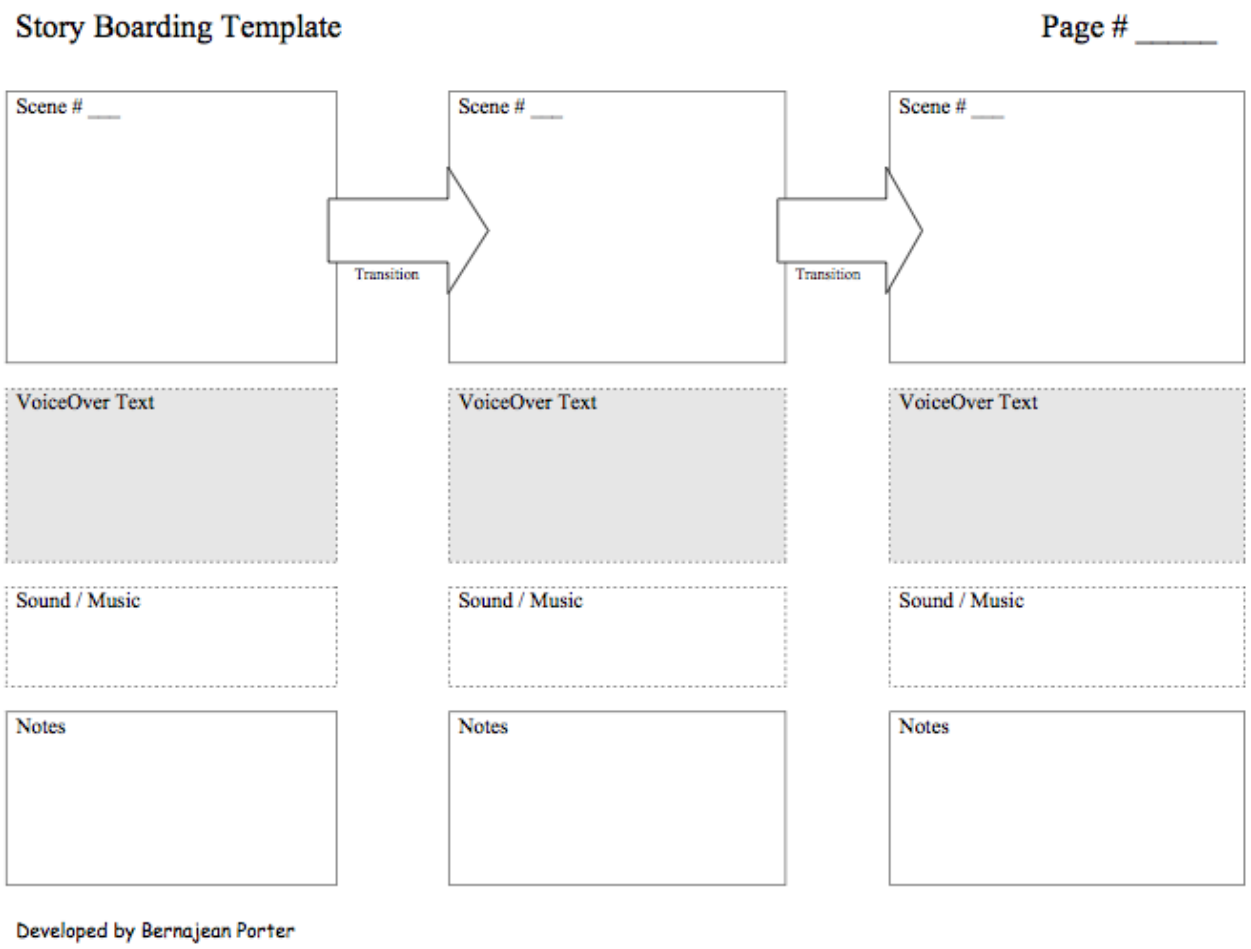
Summary

Literacy has been a main tenant of education since the first schools opened their doors, and many teachers are still teaching traditional literacies through traditional formats. It is easy to see how educators can fall into routines by repeatedly doing the same thing day after day. Students, however, want new, authentic learning opportunities that are meaningful and relevant. Digital storytelling is a proven method of providing such relevance for the classroom (Churchill et al., 2008; Czarnecki, 2009; Ohler, 2009).

Researchers have shown that students need new literacy skills in order to live and work in modern society; therefore, teachers must consider new methods in order to meet this need. Karchmer-Klein and Shinas (2012) noted that students need to learn this new set of skills now more than ever before. Based on the results of this study, digital storytelling is a method of providing students with the opportunity to interact with

new literacy skills within a secondary English classroom without sacrificing traditional objectives and academic outcomes.

APPENDIX A
STORYBOARD TEMPLATE



APPENDIX B
STUDENT FINAL ARTIFACT RUBRIC

Table A-1. Student artifact rubric

Criteria	Advanced	Proficient	Needs Improvement	Warning	Score
Main Idea / Exposition	Main idea is personal, but shows a universal appeal. Author clearly demonstrates passion for the main idea that resonates throughout the essay. Exposition engages the reader by laying out the main idea and supporting details in a logical order. Story contains a clear setting and point of view that orients the reader with the main idea.	Main idea is personal, but shows little universal appeal. Author clearly demonstrates passion for the main idea that resonates through most of the essay. Exposition engages the reader by laying out the main idea and supporting details in a logical order most of the time. Story contains a setting and point of view that orients the reader with the main idea.	Main idea is somewhat personal, but lacks universal appeal. Author demonstrates some passion for the main idea that resonates through some of the essay. Exposition engages the reader by laying out the main idea and supporting details in a logical order rarely. Story contains some setting and point of view that orients the reader with the main idea.	Main idea is not personal. Author demonstrates little or no passion for the main idea but it does not resonate through the essay. Exposition does not engage the reader by laying out the main idea or supporting details in any logical order. Story contains very little or no setting and point of view to orients the reader with the main idea.	
Mechanics / Grammar	Contains little to no errors in conventions such as capitalization, punctuation, spelling.	Contains some errors in conventions such as capitalization, punctuation, spelling.	Contains numerous errors in conventions such as punctuation, spelling.	Contains serious of errors in conventions such as punctuation, spelling.	
Senses	Rich idea development, engages reader, and most senses are employed: sight, sound, taste, touch, and hearing.	Strong idea development, and some senses are employed.	Appropriate use of language, limited development of ideas, and few senses are employed.	Inappropriate use of language, minimal or no idea development, and no senses are employed.	

Table A-1. Continued

Criteria	Advanced	Proficient	Needs Improvement	Warning	Score
Plot	Information is very organized and well-constructed. Ideas follow a logical sequence to form a clear transition from one idea to the next. Purposeful use of multiple techniques to string the events together, while also setting a clear tone. Has a complete conclusion that fully sums up all elements of the narrative while connecting the reader previous elements.	Information is mostly organized and most of the ideas follow a logical sequence. Use of multiple techniques that strings some of the events together, while also setting a clear tone. Has a conclusion that ties together most of the ideas from the piece.	Some information is organized and some of the ideas follow a logical sequence. Use of few techniques to string the events together. Sets a tone. Has an ineffective conclusion that does not fully connect the reader to previous elements in the piece but ties together some ideas from the piece.	None of the information is organized and the assignment does not follow a logical sequence. Does not have evidence of any sequencing techniques to string the events together or set a consistent tone. Has little to no conclusion that does not sum up previous elements from the narrative and provides no connection for the reader.	
Personal Experience	Essay uses details that make a small personal experience, but have a wider perspective.	Essay uses some details that make a small personal experience, but have a wider perspective.	Essay uses few details that make a small personal experience that do not have a wider perspective.	Essay uses no details that make a small personal experience that do not have a wider perspective.	
Language	Uses specific language that avoids abstractions. Multiple types of sentence structure.	It uses some specific language. Mostly varied sentence structure.	There are few examples of specific language used.	No specific language is used. Uses little to no varied sentence structure.	

Table A-1. Continued

Criteria	Advanced	Proficient	Needs Improvement	Warning	Score
Narrative	Purposefully use of narrative structure elements such as pace, descriptions, experiences, and/or reflection. Use of complex and meticulous words to create a full picture of the setting, events, ideas, etc.	Use of narrative structure elements such as pace, descriptions, experiences, and/or reflection. Use of detailed words to create a mostly full picture of the setting, events, ideas, etc.	Little use of narrative structure elements such as pace, descriptions, experiences, and/or reflection. Use of some detailed words to somewhat of a picture of the setting, events, ideas, etc.	Use of few or no narrative structure elements such as pace, descriptions, experiences, and/or reflection. Does not use detailed words and does not create a picture of the setting, events, ideas, etc.	
Music	Demonstrates deliberate and justified choice of music that matches story meaning and tone.	Demonstrates deliberate and justified choice of music that mostly matches the meaning and tone.	Demonstrates some deliberate and justified choice of music that matches some of the meaning and tone.	Doesn't demonstrate deliberate and justified choice of music and doesn't match the meaning and tone.	
Images	Demonstrates deliberate and justified choice of music that matches story meaning and tone.	Demonstrates deliberate and justified choice of music that mostly matches the story meaning and tone.	Demonstrates some deliberate and justified choice of music that matches some of the story meaning and tone.	Doesn't demonstrate deliberate and justified choice of music and doesn't match the story meaning and tone.	
Narration	Narrator sounds comfortable, and delivery is smooth. Appropriate pacing and tone.	Narrator sounds comfortable, and delivery is smooth. Mostly clear and good pacing and tone.	Narrator sounds somewhat comfortable, and delivery has some faults. Pacing and tone are not utilized.	Narrator sounds uncomfortable, and delivery has faults. Pacing and tone are not utilized.	

Table A-1. Continued

Criteria	Advanced	Proficient	Needs Improvement	Warning	Score
Technical Elements	Demonstrates ability to use all aspects of the editing program to produce an engaging and complete final product. Multiple functions from the program are used.	Demonstrates ability to use most aspects of the editing program to produce an engaging final product. Some functions from the program are used.	Demonstrates ability to use some aspects of the editing program to produce a final product. Few functions from the program are used.	Demonstrates ability to use little or no aspects of the editing program to produce a final product. No functions from the program are used.	
Digital Citizenship	Demonstrates ethical use of technology and photos are properly cited.	Demonstrates responsible use of internet resources and most photos are properly cited.	Demonstrates responsible use of equipment and software, and some photos are properly cited.	Demonstrates responsible use of equipment.	
Final Product Elements / Editing	Final product blends music, narration, and pictures to convey main idea and tone and to enhance understanding without using too many elements that would overload the viewer.	Final Product mostly blends music, narration, and pictures to convey main idea and tone that somewhat enhances understanding without using too many elements that would overload the viewer.	Final Product has moments of disjointed elements and only somewhat conveys the main idea and tone. Too many elements are used and they are distracting to the viewer.	Final product uses basic features and doesn't blend music, narration, and pictures to convey main idea.	
Storyboard	Storyboard draft demonstrates clear understanding of visual features, and final draft is produced through revisions.	Storyboard draft demonstrates some understanding of visual features, and final draft is produced through revisions.	Storyboard draft demonstrates little understanding of visual features, and some needed revisions were done.	Storyboard draft demonstrates no understanding of visual features, and few needed revisions were done.	

Table A-1. Continued

Criteria	Advanced	Proficient	Needs Improvement	Warning	Score
Final Product Upload	Student is able to upload final product for review cleanly.	Student is able to upload the final product but the format is incorrect causing quality issues.	Student is unable to upload video, but is able to submit his or her final product in another form.	Student unable to upload final video.	
				Student Total:	/150

APPENDIX C
OBSERVATION PROTOCOL

Table C-1. Observation protocol

Category	Rule for Inclusion	Supporting Literature
Using Search engines to locate information related to the project	Student use of a search engine effectively beyond the basic word search in order to retrieve relevant information	Hagood (2009), Leu et al. (2004)
Evaluating information usefulness to the project	Students actively thinking about the information they have gathered and if it would properly portray the message they are trying to convey and its usefulness	Leu et al. (2004), New London Group (1996)
Using word processing effectively to format a document	Student use of a word processing program to properly format their document by changing font, margins, spacing, etc.	Hagood (2009), Leu et al. (2004)
Participate effectively in online discussion boards	Student use of a school selected learning management system (LMS) to communicate their ideas to other students in the class and respond to others.	Hagood (2009), Leu et al. (2004), New London Group (1996)
Using email effectively to communicate and transfer information	Student use of email to communicate effectively and share information	Leu et al. (2004), New London Group (1996)
Identify important questions to ask in order to solve issues encountered during the project	Students actively creating and asking relevant questions needed in order to solve a problem during the project	Leu et al. (2004)
Locate information to answer questions	Student use of the resources around him or her to find the answers need to move forward when an issue has occurred	Leu et al. (2004)
Using ICTs to share/publish information	Student use of ICTs to upload and/or share their personal creations with others	Leu et al. (2004), New London Group (1996)
Creating and working with alternative texts, including multimodal texts	Student creation and interaction with alternative texts using multiple formats	Hagood (2009), New London Group (1996)
Using collaborative practices	Student demonstration of the social nature of literacy by collaborating with each other to enhance their final product and/or answer questions	Gee (1996), Hagood (2009), New London Group (1996)

APPENDIX D
IRB APPROVAL

UF | Institutional Review Board
UNIVERSITY of FLORIDA

PO Box 112250
Gainesville, FL 32611-2250
352-392-0433 (Phone)
352-392-9234 (Fax)
irb2@ufl.edu

DATE: January 30, 2014

TO: Rebecca Shields
[redacted]

FROM: Ira S. Fischler, PhD; Chair
University of Florida
Institutional Review Board

SUBJECT: **Revision of Protocol #2013-U-0520**
Secondary English Teachers Experiences and Perspective on the Perceived Impact of Digital Storytelling on New Literacy Skills

SPONSOR: None

The request to revise the above referenced protocol has been reviewed and approved. Approval of this study is valid through April 15, 2014.

The Board must review any further revisions to this protocol, including the need to increase the number of participants authorized prior to implementation.

IF:dl

- *Shift focus from teacher's experience to academic outcomes and new literacies*
- *No longer using focus groups and interviews*
- *Revised consent*

APPENDIX E
PARENTAL CONSENT

Department of Gator Instruction
PO Box 12345
University of Florida
Gainesville, FL 32600-0000

Parental Consent

Dear Parent/Guardian,

I am a graduate student in the School of Teaching and Learning at the University of Florida, conducting research on digital storytelling and new literacy skills at the secondary level under the supervision of Dr. Kara Dawson. The purpose of this study is to identify the academic outcomes and new literacies evident during a digital storytelling unit within a secondary English class. Digital storytelling is the act of adding media, such as music and pictures, to create a video out of a written story.

The results of the study may help teachers better understand the benefits of digital storytelling and allow them to implement technology more effectively in the future. These results may not directly help your child today, but may benefit future students. With your permission, I would like to ask your child to volunteer for this research.

The English 12 classes this year will be completing digital stories during their future plans unit. Students will be observed during the unit, asked to reflect on this process and their digital stories will be reviewed. Student names will not be attached to the comments or reflections in any way, and their identity will be kept confidential to the extent provided by law. Participation or non- participation in this study will not affect the children's grades, school standing or placement in any programs. All students will participate in the digital storytelling unit as part of the English course; however, participation in the study is voluntary.

You and your child have the right to withdraw consent for your child's participation at any time without consequence. There are no known risks or immediate benefits to the participants. No compensation is offered for participation. Results of this study will be available in June upon request. If you have any questions about this research protocol, please contact me at [redacted] or Dr. Dawson at [redacted] Questions or concerns about your child's rights as research participant may be directed to the [redacted]

Ms. Rebecca Shields

I have read the procedure described above. I voluntarily give my consent for my child, _____, to participate in Ms. Shields' study of digital storytelling. I have received a copy of this description.

_____	_____	_____	_____
Parent / Guardian	Date	2nd Parent / Witness	Date

APPENDIX F
CHILD ASSENT

Child Assent

Dear Student,

My name is Ms. Shields and I am a student at the University of Florida. I am trying to learn about the benefits of digital storytelling on new literacy skills. Digital storytelling is the act of adding media, such as music and pictures, to create a video out of a written story.

I will be working with and observing the English 12 classes at Homewood High School. All students will complete a digital story as part of their English course; however, participation in the study is optional. If you decide to participate in the study, you will be asked to reflect on the process, and your digital stories will also be reviewed.

There are no known risks to participation, and all responses will be kept anonymous. You do not have to be in this study if you don't want to and you can quit the study at any time. Other than the researchers, no one will know your answers, including your teachers or your classmates outside of your focus group. If you don't like a question, you don't have to answer it and, if you ask, your answers will not be used in the study.

I also want you to know that whatever you decide, this will not affect your grades in class or teacher interactions. Your parent / guardian said it would be OK for you to participate. Would you be willing to participate in this study?

_____ Yes

_____ No

_____
Print Name

_____ _____
Signature Date

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BIOGRAPHICAL SKETCH

Rebecca Shields is an English/language arts teacher at Homewood High School in Homewood, Alabama. She earned an Ed. D. from the University of Florida in curriculum and instruction with a concentration in educational technology in 2014. She holds a B.A. in telecommunication and film (2005) from the University of Alabama and a M.A. in English/Language arts secondary education (2008) from the University of Alabama at Birmingham. She is interested in research around technology integration and online education at the secondary level.