

IMPLEMENTATION OF DIGITAL STORYTELLING IN THE CLASSROOM BY  
TEACHERS TRAINED IN A DIGITAL STORYTELLING WORKSHOP

A Dissertation Presented to the  
Faculty of the College of Education  
University of Houston

In Partial Fulfillment  
of the Requirements for the Degree

Doctor of Education

by

Bulent Dogan

April, 2007

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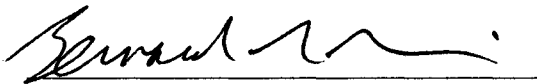
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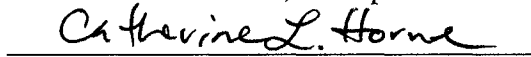
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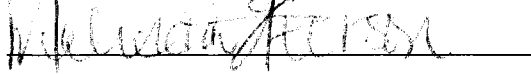
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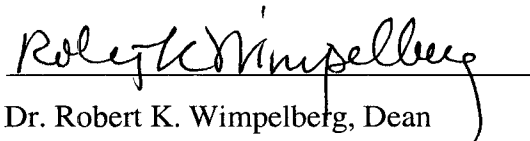
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### Abstract

Digital storytelling, one of the new technology applications used in the classroom by teachers, is recognized for its immediate benefits by educators. Certain benefits to students, such as developing 21st century skills, increasing student motivation and engagement, increasing creativity, respecting each other's' backgrounds, facilitating discussions in the classroom, helping shy students who are willing to express themselves through stories, and increasing the self-confidence of special needs students are reported in the literature (Banaszewski, 2005; Howell & Howell, 2003; Hull & Nelson 2003; Jakes & Brennan, 2005; Salpeter, 2005; Robin, In press).

Digital storytelling is a relatively new strategy that utilizes multiple technology tools that can be used by teachers and students in K-12 education. The present study lays a foundation for future studies to investigate the implementation of digital storytelling in K-12 classrooms. The study attempted to understand how a group of teachers used digital storytelling in the classroom after they were trained in a workshop at the University of Houston. The following issues were addressed in the study: how digital storytelling was/can be used as a technology tool in the classroom, what effects on students were observed by teachers and possible problems that might arise in the implementation process. The researcher took a case study approach using both qualitative and quantitative data collection methods for the study because the case study approach fit best with the particular characteristics and challenges of this project. Given the conditions of

the research study, an opportunity sample was used. The population of interest in the study was participants who attended a digital storytelling workshop organized by the Laboratory for Innovative Technology in Education (LITE) at the University of Houston. Two surveys and three interviews were the backbone of the collected research data.

The results of the study suggested that, even though almost all of the teachers' perceptions about using digital stories in the classroom were very positive immediately after the workshops, in practice, more than half of the teachers in the follow up study didn't use digital storytelling during the implementation period at all. The reasons behind not using digital stories in the classroom were discussed with the barriers that teachers faced in the dissertation. The results also suggests that despite the fact that digital storytelling is a powerful tool to convey desired messages around a topic or a subject area by the teachers; in practice it is also a very powerful tool that has positive impacts on students and their performances. The teachers who used digital storytelling in the classroom with their students reported and all agreed that they observed increases in certain skills such as technical skills, presentation skills, research skills, organizational skills, and writing skills with their students. It is noted in the literature that when students actively participate in the creation process of digital storytelling, they most notably develop certain 21st century skills (Howell & Howell, 2003; Jakes, 2006; Robin, In press). Overall, digital stories were reported by teachers as having positive effects on students' 21st century skills. Another important effect observed by teachers was increased motivation and engagement levels in their students. Teachers believed that creating digital stories increased their students' motivation and engagement levels. The findings from this study supported the idea of the "director's chair effect" as well as "being able to

express themselves” and “simply being able to use computers” as to why digital storytelling effectively captivates and motivates students (Banaszewski, 2005; Paull, 2002).

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## Incorporation of Digital Storytelling in the Classroom by Teachers Trained in a Digital Storytelling Workshop

During the past decade, new sets of skills necessary to prepare students for life and work in the digital age have become the focal point of both business and educational worlds (EnGauge, 2003). Educational environments must be adapted to meet the demands of our global economy and a dramatically different society to in order for students to develop 21<sup>st</sup> century skills (CEO Forum on Education and Technology, 2001). Twenty-first century skills include digital literacy, inventive thinking, effective communication and high productivity (Jakes, 2006). Specifically, educational technology can provide educators with valuable tools to teach and develop 21<sup>st</sup> century skills, a primary reason why integration of technology in education has become a major area of interest over the last decade (Partnerships for 21<sup>st</sup> Century Skills, 2002).

Digital storytelling is one educational technology tool used in the classroom. The process of digital storytelling utilizes almost all of the skills students are expected to have in the 21<sup>st</sup> century (Jakes, 2006). Information literacy, visual literacy, being creative and taking risks, and using the latest technology to communicate effectively can all be achieved when students actively participate in the creation process of digital storytelling (Jakes & Brennan, 2005; Robin, In press).

Hull and Nelson (2005) define digital storytelling as a form of multimedia consisting of images and segments of video with background music and a voice-over narrative. In essence, digital storytelling is a process of creating a short movie that combines a script or an original story with various multimedia components, such as images, video, music and narration, often an author's own voice.

Examples of digital stories began to appear in the early 1990s and coincided with the increased availability of computer and multimedia technology (Paull, 2002). The non-profit Center for Digital Storytelling (CDS) was an early pioneer in the field and provided some of the first examples of digital stories. The CDS, founded by Joe Lambert and Nina Mullen, began as the San Francisco Digital Media Center in 1994 and then became the Center for Digital Storytelling in 1998. CDS assists people in using digital multimedia tools to tell autobiographical stories as short video pieces (Paull, 2002).

### *The Types of Digital Storytelling*

Robin (In press) sorts digital stories by topic area into three categories: personal or narrative stories, stories that inform or instruct, and stories that re-tell historical events.

#### *Personal or Narrative Stories*

One of the most commonly used story types involves stories that tell of personal experiences, memories, events or simply autobiographies. Personal digital stories can also be broken down into subcategories such as character stories, memorial stories, stories about events or places in our lives, and stories about what we do (Lambert, 2003).

#### *Stories that Inform or Instruct*

The main focus of stories that inform or instruct is to teach certain subjects to an audience. Teachers can use these types of stories to teach subjects to their students in content areas such as science, math, history or social studies (Robin, In press).

### *Stories that Re-tell Historical Events*

This specific type of digital story centers on examining and retelling historical events. Historical speeches or images from famous events are typical of these stories (Robin, In press).

An ever increasing number of K-12 teachers are using digital storytelling as an exciting way of teaching content in the classroom (Weiss, Benmayor, O'Leary & Eynon, 2002). Digital storytelling has been used in the classroom for various purposes, such as to teach content to students, to empower students by making them active researchers and storytellers, to teach writing, to meet International Society for Technology in Education (ISTE) Technology standards, and to build communities through storytelling (Banaszewski, 2002; Salpeter, 2005; Weiss, Benmayor, O'Leary & Eynon, 2002).

There are few research studies that show how digital storytelling can be used as an effective tool in the classroom, what effects can be observed on student learning, and what complications may arise in the implementation process. Given the lack of current research on effective use of digital storytelling in K-12 education, the Laboratory for Innovative Technology in Education (LITE) at the University of Houston initiated a series of workshops on digital storytelling and its uses in education for teachers.

LITE strives to help educators become leaders who embrace technology as a way to address real-world issues through projects that link students to their communities. The doctoral students in this program work with pre-service and in-service teachers as part of educational teams that include university faculty, other graduate students, and professionals from local educational institutions and community organizations. These teams work on the design, development, and evaluation of a new generation of

educational resources and instructional strategies that emphasize collaboration, active learning, and critical thinking. The LITE website at <http://www.coe.uh.edu/lite/> provides more information about the laboratory and its functions.

LITE responded to the very rapid popularity of digital storytelling, which seemed to capture the imagination of students, teachers and faculty. LITE tried to capitalize on the exploding interest in this technology tool by developing workshops. These workshops on digital storytelling were developed for elementary, middle, and high school teachers during the summer of 2005.

The major goals of the workshops were to introduce educators to digital storytelling and to explore how it could be used as an effective teaching tool in their classrooms and as an effective learning tool for their students. The specific objectives of the workshop were to have participants:

1. Learn about the different types of digital stories that can be created by students and instructors.
2. Examine the most common elements of digital storytelling.
3. Acquire hands-on experience using computer-based software to design and create their digital stories.
4. Gain theoretical knowledge about how digital storytelling can be used to promote students' research and writing skills as well as technological literacy.
5. Investigate the most important considerations for educators who want to begin integrating digital storytelling in their instruction.

In addition to these objectives, the LITE wanted to test, evaluate and improve their ability to teach technology skills to teachers so that they could apply these methods

in the classroom. The researcher took a case study approach using both qualitative and quantitative data collection methods for the study because the case study approach best fit the particular characteristics and challenges of this project. The use of case study as an evaluation strategy is supported for two reasons:

First, the ability to incorporate an investigation of the context directly satisfies an evaluation's need to monitor and assess both the intervention and the implementation process. Second, the case study is not limited to either qualitative or quantitative data, but can incorporate both. (Yin, 1994, p. 59)

### *Purpose of the Study*

This dissertation project aims to document teachers' use of digital storytelling in the classroom after attending the summer workshop at the University of Houston. Specifically, the research will investigate if and how teachers incorporated digital storytelling in the classroom as well as the challenges and successes they faced in the implementation process.

### *Need for the Study*

As stated previously, digital storytelling is a relatively new strategy that utilizes multiple technology tools that can be used by teachers and students in K-12 education. There is a limited research base to show how digital storytelling is incorporated in the classroom. Most of these research studies rely on observations as they are anecdotal. More research implementing various methods is necessary to better understand the implementation of this tool in the classroom. In addition, there has only been one study to attempt to identify potential obstacles for successful use of this tool by K-12 teachers (Banaszewski, 2005). The present study lays a foundation for future studies to investigate

the incorporation of digital storytelling in K-12 classrooms by attempting to answer the following research questions.

### *Research Questions*

In order to achieve the above purpose, this study addresses the following three questions:

1. To what extent do teachers trained in the University of Houston's digital storytelling workshop integrate digital storytelling in the classroom?
2. In what ways and for what purposes have teachers used digital stories in the classroom?
3. If teachers did not choose to use digital stories, what were the barriers that prevented teachers from using digital storytelling in the classroom?

### *Definitions*

For the purpose of this study, the following definitions will be used.

#### *21<sup>st</sup> Century Skills*

This term describes a new set of skills necessary to prepare students for life and work in the digital age. These skills include digital literacy, inventive thinking, effective communication, and high productivity abilities (CEO Forum on Education and Technology, 2001). A more detailed description of these skills will be discussed in Chapter 2.

#### *Digital Storytelling*

Digital storytelling combines the art of storytelling with a variety of multimedia components, such as sound, music, digital pictures, video clips and text. Digital stories usually last between two and ten minutes. Topics used can include personal tales, retellings of historical events, teaching/introducing a specific subject to an audience, and various other purposes (Robin, In press).

#### *Use of Digital Storytelling in the Classroom*

In this study, using digital storytelling in the classroom can mean any of the following: teachers' use of digital stories created by *others* to teach content in the classroom, teachers' use of digital stories created by *others* and *self* to teach content in the classroom, and teachers having their students create digital stories to learn content.

#### *Technology Integration*

Technology integration is the incorporation of technology resources and technology-based practices into the daily routines, work, and management of schools (National Forum on Education Statistics, 2002).

### *Technology Resources*

Technology resources are computers and specialized software, network based communication systems, peripherals, cameras, audio recorders and infrastructure (National Forum on Education Statistics, 2002).

### *Summary*

According to the literature, which will be explained in detail in the next section, students can develop 21<sup>st</sup> century skills and experience many other benefits through the use of digital storytelling. There is a dearth of structured research studies about this relatively new teaching tool and its potential use in K-12 schools. The present study attempts to address the following issues: how digital storytelling may be used as a tool in the classroom and possible problems that may arise in the implementation process. Chapter 2 will detail digital storytelling and review the related literature.

## Chapter 2

### Review of the Related Literature

This dissertation project aims to document teachers' use of digital storytelling in the classroom after attending the summer workshop at the University of Houston. Specifically, the research will investigate if and how teachers incorporated digital storytelling in the classroom, as well as the challenges and successes they faced in the implementation process. The sections that follow will describe 21<sup>st</sup> century skills, elements of and the process of creating digital stories, and digital storytelling in K-12 education.

#### *21<sup>st</sup> Century Skills*

During the first decades of the 21<sup>st</sup> century, our society will need more and more technologically literate people with 21<sup>st</sup> century skills. The North Central Regional Educational Laboratory (NCREL) describes 21<sup>st</sup> century skills in four general categories: digital age literacy, inventive thinking, effective communication and high productivity (EnGauge, 2003).

#### *Digital Age Literacy*

Digital age literacy is defined as the ability to use digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in society (ICT Literacy Panel, 2002). This category includes basic, scientific, economic and technological literacy; visual and information literacies; multicultural literacy; and global awareness (EnGauge, 2003) (See Appendix A, 21<sup>st</sup> Century Skills).

### *Inventive Thinking*

Cognitive skills become increasingly more important as technology becomes more ubiquitous in everyday life. The International Information and Communication Technologies Panel (2002) contends that because technology makes even simple tasks easier, it places a greater burden on higher-level skills (ICT Literacy Panel, 2002).

Inventive thinking involves adaptability/managing complexity, self-direction, curiosity, creativity, risk taking, higher order thinking and sound reasoning (See Appendix A, 21<sup>st</sup> Century Skills) (EnGauge, 2003).

### *Effective Communication*

Researchers and the business community see effective communication skills as essential for success in today's knowledge-based society (EnGauge, 2003). According to the 21st Century Literacy Summit, information and communication technologies are raising the standards on the skills needed to succeed in the 21st century" (ICT Literacy Panel, 2002). Effective communication includes teaming and collaboration, interpersonal skills, personal responsibility, social and civic responsibility and interactive communication (See Appendix A, 21<sup>st</sup> Century Skills) (EnGauge, 2003).

### *High Productivity*

In today's digital age, which is driven by a new economy, success mostly depends on having technology and the ability to use information and knowledge (U.S. Department of Labor, 1991). These skills are necessary and often determine whether a person succeeds or fails in today's workforce (EnGauge, 2003). High productivity requires prioritizing, planning, and managing for results and the effective use of real-

world tools, media, and visual literacy to produce relevant and high-quality products (See Appendix A, 21<sup>st</sup> Century Skills) (EnGauge, 2003).

Integration of technology in education has become a major area of interest over the last decade in the education world. Partnerships for 21<sup>st</sup> Century Skills (2001) recognizes educational technology as a valuable tool for educators to teach and develop 21st century skills. Digital storytelling, a type of educational technology tool, is gaining a great deal of attention and is being recognized for its benefits in the classroom (Weiss, Benmayor, O'Leary & Eynon, 2002). The process of creating digital storytelling has been claimed to cover eighteen of the twenty expectations for 21<sup>st</sup> century skills by proponents of digital storytelling (Jakes, 2006). When students actively participate in the creation process of digital storytelling, they most notably develop skills such as information literacy, visual literacy, technological literacy and media literacy; they become more creative and take more risks; and they can communicate more effectively by using the latest technology to create digital stories (Howell & Howell, 2003; Jakes, 2006; Robin, In press). For example, since a digital story is a form of visual narrative that requires students to apply visual literacy skills, students develop visual literacy skills when they create a digital story. Visual literacy, one of the Digital Age literacies, is defined by NCREL as the ability to interpret, use, appreciate, and create images and video using both conventional and 21<sup>st</sup> century media in ways that advance thinking, decision making, communication and learning (EnGauge, 2003). Since students use images to convey their messages when they create digital stories, they need to know how to read images and learn the codes and conventions of using images; in return, it helps them develop visual literacy skills (Banaszewski, 2005).

The next section in this chapter will describe detail information about digital storytelling, different types of digital stories, the process of creating digital stories, and the benefits of digital storytelling. The next section will also describe how digital storytelling is being used in K-12 educational settings and potential barriers faced by teachers who use digital stories in the classroom.

### *Digital Storytelling*

#### *A Description of Digital Storytelling*

Jakes and Brenan (2005) describe digital storytelling as the process of writing about a topic and adding various multimedia elements, such as voice, images, and background music, to create a visual story. These stories are typically between two and ten minutes and can have a wide range of topics (Robin, In press).

#### *Elements of Digital Storytelling*

Even though there are many ways of creating or structuring multimedia stories, the CDS have identified seven basic elements for digital storytelling (Table 1) (Lambert, 2003) .

Table 1

*Seven Elements of Digital Storytelling*

| Element                     | Description                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Point of View               | is the point the story is trying to make and the perspective of the author.                                                 |
| A Dramatic Question         | is the underlying question that keeps the audience's attention until the story is over; it is usually addressed at the end. |
| Emotional Content           | is the component that enables the audience to emotionally engage in the story in a personal and powerful way.               |
| The Gift of Your Voice      | is using the storyteller's own voice in the story to make the story personal.                                               |
| The Power of the Soundtrack | is the music played in the background to support the storyline.                                                             |
| Economy                     | is wise usage of visual and audio in the story to prevent the audience from being overloaded with information.              |
| Pacing                      | is the rhythm of the story that determines its ultimate success.                                                            |

### *Process of Creating a Digital Story*

Understanding the process of creating a digital story is important because this process has been claimed by digital storytelling researchers to assist with the development of 21<sup>st</sup> century skills in students (Howell & Howell, 2003; Jakes, 2006; Robin, In press). Other benefits that have been observed in students will be explained in the next section (Salpeter, 2005; Weiss, 2002).

The process of creating digital stories is defined by Jakes and Brannon (2005) in six steps: 1) Writing; 2) Script; 3) Storyboarding; 4) Locating Multimedia; 5) Creating the Digital Story; and 6) Sharing (See Appendix B).

The first step in creating digital stories involves the writing process. This process starts with finding a topic for the story and the author starting to write about the story. A script is developed by the author after the completion of the narrative. The script also defines how the multimedia elements will be used in the story to ensure that they will contribute to the purpose of the story (Jakes & Brennan, 2005). Storyboarding is the process of organizing the flow of the movie. After storyboarding, multimedia that will be used in the story is located, and all components of the story are combined according to the script. In the final step, usually the digital story is shared with an audience (Jakes & Brennan, 2005), and it is seen as an important “public” gathering and acknowledgement of each other’s work (Paull, 2002).

Understanding these specific steps is vital for a true understanding of how digital storytelling provides benefits to and helps students to develop skills. The next section will briefly discuss benefits of digital storytelling reported in the literature.

### *Digital Storytelling in K-12*

Even though digital storytelling is not a commonly practiced educational technology strategy in K-12 schools yet, there are some examples of digital storytelling use for different purposes in the classroom (Banaszewski, 2005; Salpeter 2005). There is a small body of research concerning how digital storytelling can be used effectively in the classroom. This section of the literature review will discuss the reported benefits of digital storytelling, the most common practices of digital storytelling, how digital storytelling can be used effectively, and challenges that teachers face in their practice of digital storytelling in the classroom.

#### *Benefits of Digital Storytelling*

Robin (In press) stated that the use of digital storytelling by students can produce many benefits for them if they actively participate in the process of building digital stories. Benefits generally fall into two broad categories based on their nature: a) developing social and learning skills and b) developing 21<sup>st</sup> century skills and literacy.

#### *Developing Social and Learning Skills*

One of the most important aspects of using digital storytelling is that the whole process of creating a digital story from scratch places the author of the story in the director's chair (Paull, 2002). This gives students a chance for self-expression by creating their own movies. Studies have shown that personal narrative types of digital storytelling are very effective in representing an individual's voice and providing valuable opportunities for identity construction (Banaszewski, 2005). In his research study, Banaszewski (2005) interviewed twenty teachers and digital storytelling instructors who conducted digital storytelling projects with their students. In addition to these interviews,

he also led three digital storytelling workshops with middle and high school students. After his observations and analysis of the data from these sources, Banaszewski (2005) concluded that creating a digital story is very effective in representing an individual voice and is also a powerful form of identity construction.

Digital storytelling allows students to be the tellers, writers, performers, and producers of their own stories. Creating their own digital stories allows them to become active participants in the process of learning rather than just passive viewers (Howell & Howell, 2003). Digital storytelling is also seen as a powerful way for students to personalize their learning by teaching them to ask important questions, such as “why am I telling this story,” “what is my main point,” or “where am I in this story?” (Jakes & Brennan, 2003; Salpeter, 2005; Weiss, 2002). Creating digital stories is also suggested as an empowering and transformative process for students since they express themselves through media. It is claimed that this empowerment and transformation is especially obvious with minority students (Weiss, 2002).

Paull (2002) conducted a study on what adult students see as the power of digital storytelling. In his case study of three adult students, Paull concluded that students are much more empowered and engaged when they use multimedia for writing. He found that his students found the process more empowering than their entire school education. He explains this empowerment as being given the opportunity to be reflective and creative. Continuous engagement and motivation throughout the process of creating digital stories has also been observed in adult students (Paull, 2002).

Digital storytelling is a common activity for all grades in Scott County Schools in Georgetown, Kentucky. Students use digital stories to complete the writing portfolios

required by the state in grades four, eight, and twelve. Salpeter (2005) reported that teachers often observe the following effects with students when they use digital storytelling in the classrooms: increased student motivation and engagement, increased creativity, and increased self-confidence, especially for special education students and students with speech impairments. It is also suggested that digital storytelling helps students by allowing them to deal with issues, such as respect for each others' backgrounds, by helping students facilitate discussions in the classroom, and by helping shy students to express themselves through stories (Banaszewski, 2005; Howell & Howell, 2003; Hull, 2003; Jakes & Brennan, 2005; Robin, In press).

### *Developing Student Literacy and Skills*

Proponents of digital storytelling believe that students develop different types of 21<sup>st</sup> century skills, such as visual literacy, multimedia literacy, technology literacy and information literacy, when they actively participate in the creation process of digital storytelling (Banaszewski, 2005; Jakes & Brennan, 2002; Robin, In press).

When students are creating digital stories, an increase in their media and visual literacy is reported. It is also claimed that students learn to critically consume the media they use and become aware of issues such as copyright and the protection of personal work (Howell & Howell, 2003). Digital storytelling has been also cited to increase students' technology skills by helping them learn new ways to tell their stories (Jakes & Brennan, 2002; Weiss, 2004). When using multimedia tools to communicate their message in their digital stories, in addition to visual and media literacy skills, students usually depend on their technical skills because those receive the most attention when digital stories are shared (Banaszewski, 2005). It is also argued that students create their stories

by using a variety of different technology tools, such as digital cameras, scanners, microphones, and multimedia tools, and in return these tools help build their technology skills (Howell & Howell, 2003; Robin, In press). Since the creation of a digital story requires active research on the topic that the story will be about, students need to know how to look for specific information and how to collect the necessary materials. This process of locating multimedia and researching information can increase students' research skills (Robin, In press). Additional increases have also been suggested in students' organizational skills, communication skills, presentation skills, interview skills, interpersonal skills, problem solving skills, and assessment skills when they actively participate in the building process of digital stories (Jakes & Brennan, 2002; Robin, In press).

In summary, it can be said that majority of the reported benefits for using digital storytelling in the classroom are simply based on observations, and they are usually in the form of unmeasured hypotheses. Even though some qualitative studies, such as Banaszewski (2005) and Paull (2002), try to document some of these benefits, more structured and rigorous studies will be needed to really understand the benefits in students. In the next section of this chapter, how digital storytelling in K-12 education is being used and challenges that can be faced in the implementation process will be discussed.

### *Common Uses of Digital Storytelling in the Classroom*

When considering using digital storytelling in the classroom, one important factor is whether the instructor or the student will create the digital story (Robin, In press). A distinction can be made about digital stories based on how they are being used by

teachers in the classroom. Teachers can create digital stories themselves and use them as anticipatory sets to teach a chapter from a book or a certain subject. Stories that re-tell historical events are a good example of digital stories that can be used by teachers as anticipatory sets or provoke discussions on certain topics in the classroom. Another practice of using digital storytelling by the teachers in the classroom would be to teach students how to and have them create their own digital stories for different purposes, such as portfolios and learning a subject, etc. The third type of digital storytelling that can be used by teachers in the classroom is using stories created by others (Robin, In press).

The primary use of digital stories in the classroom is to teach a certain subject area, such as history, science or math (Robin, In press). Some other uses by teachers include graduation portfolios, students' final projects in various subject areas, teaching writing, and collaborative team work in the class (Banaszewski, 2005; Salpeter 2005; Weiss, 2002). Aside from teachers, states are also discovering the different uses of digital storytelling and using it to meet some of the standards, such as ISTE technology standards (Salpeter, 2005). For example, Hawaiian public schools' digital storytelling use for the state's annual "Island Movie Contest" is an example of multi-purpose use of this tool in the classroom. According to the Hawaiian Department of Education, this program helps their students to meet NETS and ISTE technology standards, to demonstrate their creative writing, and to increase their digital movie making skills in a collaborative teamwork effort (Salpeter, 2005).

In the researcher's review of the literature on the common uses for digital storytelling, two main categories were revealed: 1) using digital storytelling to teach

writing and 2) using digital storytelling for special group of students. In the following section, these two common uses will be discussed.

### *Using Digital Storytelling to Teach Writing*

Since the process of creating a digital story requires planning, revising, storyboarding, scriptwriting and editing (See Appendix B), digital storytelling can be used efficiently for teaching writing, something that is being recognized by school districts and states. For example, digital storytelling is a common activity for all grades in Scott County Schools in Georgetown, Kentucky. Students use digital stories to complete the writing portfolios required by the state in grades four, eight, and twelve (Salpeter, 2005).

Digital storytelling has been suggested to be an effective means of increasing students' writing skills and an effective means of teaching writing (Banaszewski, 2005; Paull, 2005). Paull (2005) reports that students feel more comfortable and empowered to write about a subject with using digital storytelling. In his case study of three adult students, he concluded that students are much more empowered and engaged when they use multimedia for writing.

One of the main advantages of using digital storytelling to teach writing is that writing is central to the process of creating a digital story. It is actually the first step in the process, and writing a good script is one of the most important factors to having a successful digital story at the end and that is what keeps a digital story creator much more careful and motivated about the writing (Brennan & Jakes, 2002). Digital storytelling facilitates authentic writing purposes when students create their stories. They start with planning their ideas and then they write about them. Writing scripts for digital stories

improves students' writing in a new, efficient, and engaging way (Banaszewski, 2005). Banaszewski, who researched strategies for using digital storytelling effectively in the classroom, points out that for the first time in his teaching career, he had 4<sup>th</sup> and 5<sup>th</sup> grade students who didn't say, "I don't have anything to write about!" Digital storytelling actually aided otherwise academically struggling students to write compositions at the elementary level (Banaszewski, 2002).

Multimedia or technology aspects of digital storytelling are regarded as the motivating factor for students, especially when digital storytelling is used for writing (Salpeter, 2005). For example, David Jakes, the instructional coordinator at Community High School District 99 in Downers Grove, Illinois, created a pilot program with his students. In his school, digital storytelling is used by health students as a tool to write public service announcements on addiction, is used by English students to create visual poetry, and is used by history students to interview parents about their high school years. He asserts that creating digital stories is more about writing than technology; however, technology and multimedia still play an important role as tools to motivate students to write about something (Salpeter, 2005).

#### *Using Digital Storytelling for Targeted Groups of Students*

The transformative and empowering feature of digital storytelling makes it a good choice to use with targeted populations, such as special education students, students who lack self-confidence, minority students, and immigrants (Hull & Nelson, 2005; Salpeter, 2005; Weiss, 2002). Teachers who participated in Scott County Schools' digital storytelling program cite that they saw motivational benefits, especially for special education students and students who lacked self-confidence (Salpeter, 2005).

The Visible Knowledge Project (VKP), headquartered at Georgetown University, is one of the most significant projects in technology and learning and involves 70 faculty members and 21 colleges throughout the nation. The digital storytelling affinity group in this project conducts research on how new technologies like digital storytelling transform teaching and pedagogical strategies when used in the classroom. One of the researchers in this group, Rina Beynamor, reports that digital storytelling was an empowering and transformative process for her “Latina Life Stories” class. She explains that students find it easier to express themselves with a multimedia text rather than a written only text. For the majority of her students who were Latina/o, the digital story became a tool for constructing a self and for contributing new perspectives on identity, community, belonging and individuality (Weiss, 2002). Digital stories are used to complete their electronic portfolios in LaGuardia Community College, one of the most internationally diverse institutions in New York City (Weiss, 2002).

Another researcher in VKP’s Digital Stories Affinity Group, Bret Eynon, primarily works with immigrant students, and he suggests that by creating oral histories with the help of multimedia and sharing it with their peers, his students easily achieved self-representation and put themselves in a broader historical and social context (Weiss, 2002).

### *Challenges and Barriers for Using Digital Stories in the Classroom*

There are not many studies that explain the problems that can be faced by teachers when they use digital stories in the classroom. However, some problems occurring with the use of new technology approaches in the classroom or the integration of technology into the curriculum may also be considered as potential barriers for the use of digital

storytelling in the classroom. This is because digital storytelling is a technology tool and teachers' use of digital stories can be considered under the broad category of multimedia use in teaching. Some of the major reported problems for teachers utilizing technology are a lack of technical help or instructional support, software issues, hardware problems, time issues, and limited access to the hardware of the technology (Dexter, Anderson & Ronnkvist, 2002; Ringstaff & Kelly, 2002; White, Ringstaff & Kelly, 2002).

Teachers who can overcome these problems are more likely to use a multimedia tool in the classroom (Sandholtz, 2001). Lacking time to explore the new technology tools is considered one of the biggest barriers for successful implementation of technology tools in the classroom (Rodriguez & Knuth, 2000). The ACOT study also concluded that if teachers have more time to explore a specific technology tool, they are more likely to use it and keep using it (Apple Inc., 1995).

Some challenges to using digital storytelling in the classroom have been cited in the literature. For example, when teachers were first introduced to digital storytelling in Scott County, not all the teachers adopted digital storytelling right away into their teaching practice (Salpeter, 2005). Teachers were initially reluctant to use it. Some teachers were concerned about how it would fit into their teaching; some of them slightly modified it according to their needs and used it in their classrooms.

Sandholtz (2001) conducted a similar study of two professional development programs using comparative case methodology. One of the programs was Apple Classrooms of Tomorrow (ACOT), which was initiated in 1985 and lasted about a decade. It provided wide spread access to technology tools for 600 teachers and their students. The second program was a technology professional development program

implemented by a public school in southern California with a total of 260 teacher participants. In her study, which compared teacher development programs, Sandholtz (2001) concluded that teachers need adequate time after professional development programs to digest what they have learned and experiment. Acquiring new skills and becoming proficient at new ways of teaching requires additional time for planning, practicing skills, and trying out and reflecting on new ideas (Rodriguez & Knuth, 2000; Sandholtz, 2001).

Another problem with the school environment is access to technology tools, namely software and hardware. The Center for Children and Technology's analysis of three sets of survey data collected from about 4, 233 teacher participants of the 2003 "U.S. Intel Teach to Future" program concluded that strong relationships have been found between teachers' access to technology and their rates of implementation (Martin, Kanaya & Crichton, 2004). The ACOT study also found that teachers who have access to software and hardware are more likely to integrate technology into their teaching than those who do not have access to it (Apple Inc., 1995; Sandholtz, 2001).

The reality of the school environment, such as lack of funding for educational technology tools, lack of support from administrators or simply lack of technology tools, is a critical issue to consider in the implementation of technology into the curriculum. Even though teachers attend technology integration workshops, rate them highly, and feel very comfortable using particular technology tools in the classroom, the school environment might not be ready for or supportive of the decision to use technology in the classroom (Sandholtz, 2001).

As a general problem with using technology in the classroom, teachers are often provided technology tools but are given little instruction on how these tools can be used meaningfully in the classroom (Banaszewski, 2006). Teacher professional development programs that specifically concentrate on strategies for effective use of technology in instruction are considered very important for engaging students in appropriate technology-based learning experiences (Sivin-Kachala, 2000). In fact, improving teacher training is mentioned as one of the seven major steps of the “National Educational Technology Plan” prepared by the U.S. Department of Education (2004). The plan points out that even though teachers have more resources available to them than ever before, they still don’t receive sufficient training on the effective use of technology to enhance learning (U.S. Department of Education, 2004). Research suggests that professional development programs can help teachers adopt new technologies into their instruction (Sivin-Kachala & Bialo, 2000). Therefore, effective use of digital storytelling would also require proper training of teachers. One significant problem that might arise using digital storytelling is that if students are left with no coaching in their use of digital storytelling, it will not make a measurable difference with their learning (Banaszewski, 2005). Banaszewski suggests that when teachers adjust their teaching and see their roles as story coaches rather than technology teachers, digital storytelling can improve students’ different literacy skills. Since digital storytelling is a relatively new educational technology tool, more instruction on how to use digital storytelling in the classroom would be necessary for teachers.

On-going process and continuing technical support technical support plays an important role in teachers’ implementation of new technology tools into their instruction.

The availability of quality technical and instructional support for teachers is considered a requirement for the successful integration of technology into the classroom (Bhatt, 2005; Ronnkvist, Dexter & Anderson, 2000). Research findings also confirm that teachers' frequency, variety, and progressive use of technology are positively correlated with the availability of quality technology support (Dexter, Anderson & Ronnkvist, 2002). Forms of support can include online communication or communities, resources, home access to technology, and coaching teams (Ringstorm & Fox, 2005).

### *Summary*

As we advance technologically, school age children will need to improve their skills to survive in this new challenging environment. Twenty-first century skills are identified as critical skills for each student to adopt before they join the nation's workforce (CEO Forum on Education and Technology, 2001). Educational technology has been recognized as an important and effective tool in order for students to develop their 21<sup>st</sup> century skills (Partnerships for 21<sup>st</sup> century skills, 2002).

Digital storytelling, one of the new technology applications used in the classroom by teachers, is recognized for its benefits by educators. Certain benefits to students such as developing 21<sup>st</sup> century skills, increasing student motivation and engagement, increasing creativity, respecting each others' backgrounds, facilitating discussions in the classroom, helping shy students who are willing to express themselves through stories, and increasing the self-confidence of special needs students are reported in the literature (Banaszewski, 2005; Howell & Howell, 2003; Hull & Nelson 2003; Jakes & Brennan, 2005; Salpeter, 2005; Robin, In press).

There are very few research studies that focus on how digital storytelling is being used in the classroom. This research study attempts to understand how a group of teachers used digital storytelling in the classroom after they were trained in a workshop at the University of Houston. Research questions posed include: are teachers using digital storytelling in the classroom, and if they do, how are they using it and what barriers do they face.

## Chapter 3

### Methodology

The purpose of the study is to describe teachers' use of digital storytelling in the classroom, specifically how teachers incorporated this technology tool in the classroom and what kind of challenges they faced in the implementation process. This chapter describes the methodology used, including the Research Design, the Participants, the Instrumentation and Data Collection Procedures, Data Analyses Procedures and the Limitations of the Analytical Approach.

#### *Research Design*

The researcher took a case study approach using both qualitative and quantitative data collection methods for the study as this approach best fit the particular characteristics and challenges of this project. Case studies are generally preferred because of the ability to incorporate an investigation of the context directly. This in return allows an evaluator to monitor and assess both the intervention and the implementation processes. Moreover, case studies are ideal in that the researcher may incorporate both qualitative and quantitative data (Yin, 1994).

Although surveys are not typically used with case studies, surveys were the primary data collection method because they are good assessment tools for collecting data and the perceptions of the participants. According to Gall, Gall, and Borg (2003) the purpose of a survey is to “use questionnaires or interviews to collect data from a sample that has been selected to represent a population to which the findings of the data analysis can be generalized” (p. 223). Therefore, the participants were surveyed, both immediately and one semester after the workshop; participants provided information on the use of

digital storytelling in the classroom and barriers they have faced when implementing digital storytelling in the classroom.

Interviews were also conducted to triangulate the data. Interviews provided in-depth information about certain topics which were not analyzed in detail using the survey data.

Since a case study approach and opportunity sampling have been utilized in this study, the results are not claimed to be generalized by the researcher.

### *Participants*

In order to conduct the study, a sufficient number of subjects had to be identified. Collectively, 31 subjects were selected through an opportunity sample. An opportunity sample is usually a sampling strategy selected for a case study or a series of case studies (Cohen, Manion & Morrison, 2000, p. 102). In opportunistic sampling, sampling decisions are guided by participants' availability (Russell & Gregory, 2003). Opportunity sampling means accessing subjects who are immediately available and usually involves choosing the nearest individuals to serve as respondents (Murray & Lawrence, 2000, p. 141; Cohen, Manion & Morrison, 2000, p. 102). Since the opportunity sample does not represent any group apart from itself, the researcher in this project does not seek to generalize about wider populations.

The population of interest in the study was the group of participants who attended a digital storytelling workshop organized by the LITE at the University of Houston during the summer of 2005. The major goal of the workshop was to introduce educators

to digital storytelling and explore how it could be used as an effective teaching tool in their classrooms and an effective learning tool for their students.

Teachers were recruited to attend the workshop from various school districts and grade levels around Houston during the summer of 2005. Different methods of advertisements, such as flyers, emails, and personal contacts, were used to recruit the participants. There were three two-day workshops organized for each teacher group: elementary, middle and high school. The opportunity sample consisted of 31 teachers, drawn from all three workshops, who agreed to participate in the study. Table 2 lists the breakdown of the grade levels and schools with which participants were. Of the 35 participants in the workshops, 31 of them successfully completed and returned their surveys. Some participants only attended the first or second day of the workshops. This situation caused the number of participants who actually completed the survey to decrease because the survey was designed to be administered on both the first and second day of the workshops. The response rate was 88% for the first survey.

Table 2

*Grade Levels Associated with Participants*

| Category    | <u>n</u> | Percent |
|-------------|----------|---------|
| Elementary  | 10       | 32.3    |
| Middle      | 12       | 38.7    |
| High School | 9        | 29.0    |
| Total       | 31       | 100     |

The participants were largely K-12 teachers. However, technology specialists working in K-12 schools, faculty members and graduate students who were affiliated with these schools were also among the participants. Table 3 lists the professions of the participants in the study.

Table 3

*Professions of Participants (n=31)*

| Category              | <u>n</u> | Percent |
|-----------------------|----------|---------|
| K-12 Teacher          | 24       | 77.4 %  |
| Technology Specialist | 4        | 12.9 %  |
| Faculty               | 1        | 3.2 %   |
| Graduate Student      | 1        | 3.2 %   |
| Other                 | 1        | 3.2 %   |

The participants were predominantly white females between the ages of 26 and 30 years old (See Table 4). The participants' teaching characteristics revealed that even though they each taught a range of subjects, English (16%) and Social Sciences (15%) were the most frequently taught (See Table 5). Elementary school teachers, who typically teach multiple subjects, were not classified separately but asked to select all subjects that they taught. Teaching experience amongst the participants varied greatly, with four to seven years being the modal response (29%) (See Table 5).

Table 4

*Demographics Characteristics of Participants*

| Category         | <u>n</u> = 31 | Percent |
|------------------|---------------|---------|
| Ethnicity        |               |         |
| White            | 17            | 54.8 %  |
| African-American | 6             | 19.4 %  |
| Hispanic         | 5             | 16.1 %  |
| Asian-American   | 2             | 6.5 %   |
| Other            | 1             | 3.2 %   |
| Gender           |               |         |
| Male             | 3             | 9.7 %   |
| Female           | 28            | 90.3 %  |
| Age              |               |         |
| 26-30            | 7             | 22.6 %  |
| 31-35            | 5             | 16.1 %  |
| 36-40            | 2             | 6.5 %   |
| 41-45            | 6             | 19.4 %  |
| 46-50            | 4             | 12.9 %  |
| 51-55            | 3             | 9.7 %   |
| 56-60            | 2             | 6.5 %   |
| 61-65            | 2             | 6.5 %   |

Table 5

*Teaching Characteristics of Participants*

| Category                       | <u>n</u> | Percent |
|--------------------------------|----------|---------|
| Teaching Experience            |          |         |
| First Year                     | 1        | 3.2%    |
| 2-3 years                      | 3        | 9.7%    |
| 4-7 years                      | 9        | 29%     |
| 8-12 years                     | 7        | 22.6%   |
| 13-20 years                    | 8        | 25.8%   |
| 21-29 years                    | 3        | 9.7%    |
| Total                          | 31       | 100%    |
| Subject Taught                 |          |         |
| Art                            | 8        | 11%     |
| Biological Sciences            | 3        | 4%      |
| Chemistry                      | 2        | 3%      |
| English/Language Arts          | 11       | 16%     |
| Health Science                 | 2        | 3%      |
| Geosciences                    | 3        | 4%      |
| Industrial/Technology Teaching | 6        | 8%      |
| Language other than English    | 6        | 8%      |
| Mathematics                    | 7        | 10%     |
| Music                          | 4        | 6%      |

Table 5 (Continued)

|                    |    |      |
|--------------------|----|------|
| Physical Education | 1  | 1%   |
| Physics            | 1  | 1%   |
| Social Studies     | 10 | 15%  |
| Other              | 7  | 10%  |
| Total              | 71 | 100% |

The second survey was administered one semester after the spring 2006 training. The number of respondents to the second survey was 18 out of 31 original respondents. This was partly as a result of/due to the long time period between the two data collection points. Even though several contacts were made to ensure that participants would not lose interest with the researched topic between the two administration points, the length of time between the two data points and technical difficulties when contacting participants, such as bounced back emails or no contact information, may have reduced the response rate for the second survey. A basic descriptive analysis was performed later to see the difference between the two groups: non-respondents (Group 1,  $n=13$ ) and respondents (Group 2,  $n=18$ ) to the second survey. The results of this analysis were presented in Chapter 4.

#### *Instrumentation and Data Collection Procedures*

This study examined teachers' perceptions of digital storytelling use in the classroom after training in a workshop, their actual implementations in the classroom and barriers they faced in this implementation process. Two different instruments were

developed by the researcher for measuring the goals of the study. In addition to the surveys, three teachers were interviewed after the second survey.

Since the University of Houston bears the full responsibility for the performance of all research involving human subjects and provides guideline policies for the research, a formal application was made to the UH Committee for the Protection of Human Subjects for permission to conduct the survey. Approval for both instruments was requested and granted from the Committee for the Protection of Human Subjects at the University of Houston (See Appendix C, Human Research Approval). The participants were assured that their demographic information and survey answers would be kept confidential; this was notified to them in the cover letter for Instrument 1 and in the homepage of the online survey of Instrument 2 (See Appendix D, Consent Letters).

Two survey instruments have been used to collect data from participants. Instrument 1 was administered during the workshop and Instrument 2 was administered one semester after the training in the beginning of spring 2006.

Participants were contacted via email between the two data collection points. The initial draft of the email was written by the researcher and edited by the LITE research group. The researcher's advisor distributed the email approximately four months after the summer workshop in October 2005. The email consisted of the latest information on LITE's digital storytelling initiative and a reminder of available assistance with digital storytelling (See Appendix G, Contact Letter). Email contact with participants served as an on-going follow up effort on their use of digital storytelling in the classroom and as an offer of technical assistance. The contents of these email responses were not analyzed as data.

Instrument 2 was designed as a follow-up survey about teachers' experiences using digital storytelling in the classroom one semester after they were trained in the workshop. Online administration of the survey was preferred by the researcher for time and convenience. Once the instrument was finalized and the permission was obtained from the Human Research Committee, the original group of teachers was emailed and asked to participate in this follow-up survey. The online survey was left open for four weeks and weekly reminders were sent to teachers to participate in the survey. Initials of the participants were used to match their responses with the first survey.

The researcher conducted three interviews with teachers who participated in both surveys during the summer of 2006. The interviews conducted were phone interviews given the convenience. Various questions were asked to clarify information about teachers' answers to the second survey. These sessions were tape-recorded for later transcription (See, Appendix-I-Interviews).

#### *Instrument 1*

A survey instrument was designed to evaluate the effectiveness of the workshop and assess teachers' perceptions of using digital storytelling in the classroom in the future (See Appendix E, Survey Instrument 1).

Instrument 1 was designed by the researcher based on a review of the related literature and LITE digital storytelling research group feedback. The following constructs were measured in Survey 1:

##### *Teacher's Technology Proficiency*

The first part of the survey included Likert-style questions that asked teachers about their technology proficiency. National Educational Technology Standards for

Teachers (NETS-T) cites technology proficiency as the first standard for applying technology in educational settings (ISTE, 2000). A teacher's experience with technology influences how technology will be applied in the classroom. A preponderance of literature indicates that more proficient users of technology are more likely to integrate technology in the classroom. Krueger, Hanson & Smaldino (2000) also reported that teachers with a strong background in technology applications have more success with technology infusion.

#### *Teachers' Access to Technology*

Since strong relationships have been found between teachers' access to technology and their rates of implementation (Martin, Kanaya & Crichton, 2004), the instrument included questions about teachers access to technology. (See Appendix E, Instrument 1, Section B.) Understanding teacher's access to technology is also important because it is cited as one of the barriers teachers face when integrating technology into classroom practice (White, Ringstaff & Kelly, 2002).

#### *How Digital Storytelling Can Be Used by Teachers*

When considering using digital storytelling in the classroom, one important factor is whether the instructor or the student will create the digital story (Robin, In press). To better understand how digital storytelling can be used in the classroom, instruments included questions about how teachers used and might use digital storytelling in the classroom.

#### *Barriers for Digital Storytelling in the Classroom.*

Some of the major reported problems for teachers who use technology are a lack of technical help or instructional support, software issues, hardware problems, time issues

and ready access to the hardware of the technology (Dexter, Anderson & Ronnkvist, 2002; Ringstaff & Kelly, 2002; White, Ringstaff & Kelly, 2002). The surveys asked questions about barriers for the implementation of digital storytelling in the classroom.

After construction of the items, the instrument was piloted on 8 pre-service teachers who were taking technology integration classes at the University of Houston in the spring of 2005. Instrument 1 was finalized after the feedback on this pilot version. Instrument 1 consisted of two parts designed for administering before and after the workshop. In the first part, teachers were asked to complete a questionnaire before the workshop. These items aimed to measure teachers' technology proficiency using a five-point Likert-scale ranging from (1) strongly disagree to (5) strongly agree. This part also consisted of open-ended items to measure awareness of digital storytelling among the participants.

The second part of the survey was administered at the end of a two-day training session. A five-point Likert-scale ranging from (1) strongly disagree to (5) strongly agree was used for evaluation of training sessions. Open-ended items were used to find out teachers' plans for future digital storytelling use in the classroom.

#### *Instrument 2*

A follow-up survey was designed by the researcher to assess how the teachers who had participated in the training incorporated digital storytelling in the classroom and to explore the implementation process (See Appendix F, Survey Instrument 2). The instrument was designed by the researcher based on review of the related literature, feedback from the LITE digital storytelling research group, and feedback on Instrument 1.

Instrument 2 consisted of four sections and included the same constructs measured in Instrument I. The first section included Likert-style and open-ended questions about how and in what frequency teachers used digital storytelling in the classroom. In the second section, teachers were asked to answer questions about barriers they faced when using digital storytelling in the classroom. Open-ended items were attached to each question to get more detailed information on the problems reported by teachers. Section three of the instrument aimed to assess workshop effectiveness by using a five-point Likert-scale ranging from (5) strongly agree to (1) strongly disagree. The final section solicited participants' demographic information. This group of respondents consisted of only 18 participants out of the original 31.

### *Interviews*

Three interviews with teachers who responded to both surveys were conducted. The purpose of these interviews was to better understand how these teachers used digital storytelling in the classroom, to get detailed answers to close-ended survey items, and to elicit specific answers on the part of the respondents. A semi-structured interview type was chosen as the interviewing approach because of the characteristics of the study. A semi-structured interview involves asking a series of structured questions; however, questions tend to shape responses to the researcher's perceptions of how things are (Gall & Gall, 2003, p.441). Teachers who participated in both surveys and used digital stories in the classroom were asked to be interviewed for further research. Eventually, three teachers were selected for the interviews based on their availability.

Interviewee #1 was a female high school social studies teacher with a moderate level of technology proficiency. Interviewee #2 was a male elementary school teacher

with a high level of technology proficiency in teaching all subjects. Interviewee #3 was a female high school art, digital graphics and computer animation teacher with a high level of technology proficiency.

In the next chapter, structured question responses as well as additional insights from the interviewees will be presented. The results of the interviews were also summarized in categories in Table 33. The scripts of interview questions and responses can be found in Appendix-I-INTERVIEWS.

### *Data Analysis Procedures*

SPSS 13.0 was the main statistics software used for data analysis along with Microsoft Excel 2003. The demographic information from both instruments was reported descriptively, using tables describing the responses of each participant. Descriptive statistics and frequencies were calculated for each type of question item.

Likert style items and items with common response options are reported descriptively. Question types such as “Yes-No” or “All that Apply” were converted into percentiles and reported descriptively. Open-ended items of the surveys were analyzed by category development, which is consistent with the principles of grounded theory. The grounded theory approach is based on the idea that a group or groups share specific social and psychological problems that are not necessarily articulated (Glaser & Strauss, 1967). In this qualitative approach, the researcher starts by collecting data from prior research or theory and then searches for theoretical constructs, themes, and patterns that are “grounded” in empirical data (Borg, Gall & Gall, 2003, p.41). For the analysis of open ended items, categories were developed consistent with the principles of grounded theory by the researcher. According to Borg, Gall & Gall (2003), researchers need to develop a

category label and definition for each type of phenomenon in the database that is to be analyzed. Each response was analyzed to find out what reasons the respondents gave for answering that particular item. The response was highlighted with a keyword. A category table was developed based on the responses. A category is a construct that refers to a certain type of phenomenon mentioned in the database (Borg, Gall & Gall, 2002, p.454). One category table was created for each item. The categories were arranged in the order of most-reported to least-reported reason. The number of categories was decided based on the number of responses. Only manageable numbers of categories have been provided, and categories with very few respondents have been avoided or combined together in an “other” category. Frequency distribution of given responses to open-ended items was presented in Chapter 4. Open-ended items were also used as supplementary data to findings from close-ended items.

Given the fact that digital storytelling is a relatively new educational tool and structured research on its use in K-12 education is limited, the researcher wished to garner as much data as possible. Therefore, the study had a large data set; however, the following three general research questions were initially identified as the research questions to answer:

1. To what extent do teachers trained in the University of Houston’s digital storytelling workshop integrate digital storytelling in the classroom?
2. In what ways and for what purposes have teachers used digital stories in the classroom?
3. If teachers did not choose to use digital stories, what were the barriers that prevented teachers from using digital storytelling in the classroom?

Though these research questions were tightly defined in the beginning of the research study, through the process of data analysis, these questions actually became more refined questions to better understand the use of digital stories in the classroom. In particular, Research Question 2 was extended because the “purposes” asked for in this question were around student outcomes. To fully answer Research Question 2, therefore, the analysis necessitated the discussion of observed student impacts, which naturally came about through the analysis process. Additional results that emerged from the student will be discussed briefly in Chapter 5.

### *Limitations of Analytical Approach*

One of the limitations of the method used was the instruments themselves. Even though Instrument 1 was carefully checked for validity by a pilot version, a full analysis of items on pilot results has not been performed due to the small number of respondents. Instrument 2 served as a follow up survey to Instrument 1 and included some of the same questions as Instrument 1. Instrument 2 was not piloted before its administration mainly because of time issues; however, both instruments were extensively reviewed by content experts before their administration.

Another limitation was that the second survey had a relatively low response rate (58%). This was partly because of the long time period between the two data collection points. Even though several contacts were made to ensure that participants would not lose interest with the researched topic between the two administration points, the length of time between the two data points and technical difficulties when contacting participants, such as bounced back emails or no contact information, might have reduced the response

rate for the second survey. There is a comparison of those who did not respond to the second survey and those who did respond to the second survey in Chapter 4.

A third limitation of the study was the survey method itself. The use of close-ended items had a limitation on providing detailed information about participants' responses. Open-ended items were used to reduce this limitation in order to elicit more information on certain questions. In addition, interviews were conducted to better understand in detail some of the problems that participants faced with their use of digital storytelling in the classroom.

A fourth limitation was the fact that the researcher began with a small number of participants ( $n=31$ ) for Survey I, and this number decreased further in Survey II ( $n=18$ ). A larger survey of participants would be necessary for statistical analysis without great error estimates.

A final limitation of the study is using only descriptive analysis to understand the data collected. Descriptive analysis is used "if the intent is to study phenomena as they exist at one point in time" (Borg, Gall & Gall, 2003, p.289). One major limitation of the descriptive research is that it doesn't explain what causes a specific behavior, motivation or occurrence as in casual research. However, it lays a firm basis for explaining and changing an educational phenomenon by generating a description of it (Borg, Gall & Gall, 2003, p.290).

The researcher recognizes that there are some limitations to the case study approach. The findings from this study cannot be considered generalizable as they are usually more problematic in case studies (Borg, Gall & Gall, 2003, p.466). Case studies are seen to be generalizable to theoretical schemes and not to populations or universes

(Winter & Foggin, 2002, p. 117). Since the case study does not represent a sample, the researcher's goal is not to claim that the results of this study can be generalized.

### *Summary*

The purpose of the study was to find out about teachers' use of digital storytelling in the classroom. Specifically, the researcher investigated how teachers incorporated digital storytelling in the classroom, and what kinds of problems they had in the implementation process. In this chapter, the research methodology used in this study was discussed, giving a description of the participants and the statistical procedures that were followed, and a listing of the limitations or possible threats to the internal and external validity of the study. Chapter 4 will present the results of the analyses.

## Chapter 4

### Results

This study examined teachers' perceptions of digital storytelling use in the classroom after training in a workshop, their actual implementations in the classroom and the challenges they faced in this implementation process. This chapter describes the results of the statistical analysis for Instrument 1, Instrument 2 and Interviews. The chapter will address the following research questions in the study:

1. To what extent do teachers trained in the University of Houston's digital storytelling workshop integrate digital storytelling in the classroom?
2. If teachers have used digital stories in the classroom, in what ways have digital stories been used? What purpose did teachers have in using digital stories in the classroom?
3. If digital stories were not used, what were the barriers that kept teachers from using digital storytelling in the classroom?

#### *Descriptive Context for Research Questions*

Survey 1 data is presented in this section as contextual information to better understand the results. The majority of the data from Survey 1 was not directly related and linked to actual research questions, but information from Survey 1 provides a background for formulating the research questions, Survey 2 and the interviews. Therefore, the following descriptive results will provide a framework for the actual research questions.

### *Descriptive Context for Research Question 1*

In Survey 1, participants were asked whether they were familiar with digital storytelling before they registered for the workshop, and what they thought digital storytelling was. 77.4% of the participants indicated that they were not familiar with digital storytelling before the workshop (See Table 6).

Table 6

#### *Participants' Familiarity of Digital Storytelling before the Workshop (n=31)*

| Question Item                                                                      | "Yes"<br>% | "No"<br>% |
|------------------------------------------------------------------------------------|------------|-----------|
| Were you familiar with "Digital Storytelling" before registering for the workshop? | 77.4       | 22.6      |

Two main themes emerged from the analysis of the open ended question item in Survey 1, "What do you think digital storytelling is?" Most of the participants' responses fell into the "*telling a story using various media/technology components*" category (See Table 7). The following sample responses were considered under this category: "using the computers with enhanced components/digital camera, video camera, scanner, etc. to record and create stories;" "an alternative way to communicate with others-other than orally or written only- the additional ability to add sound, images, video to the oral presentation;" and "using still pictures to create a video program to tell a story or illustrate a concept to an audience." The participants also believed that digital storytelling was an "advanced or some other form of Microsoft PowerPoint." Responses like "some other form of PowerPoint" and "similar to a PowerPoint Presentation with video and

audio” fell under this theme as well. All participants except one had some sort of open response for this question item, which can be seen from Table 7. There was no overlap in categorization for all open ended items in Survey 1, meaning that one person’s response did not fit into more than one category.

Table 7

*Themes for Open-Ended Item “What do you think digital storytelling is?”*

---

| Themes                                                    | Frequency |
|-----------------------------------------------------------|-----------|
| Telling a story using various media/technology components | 20        |
| Advanced or other form of Microsoft PowerPoint            | 6         |
| Other                                                     | 4         |
| Missing                                                   | 1         |
| Total                                                     | 31        |

---

*Descriptive Context for Research Question 2*

Survey 1 had asked questions about the participants’ future plans for using digital storytelling in the classroom. As seen in Table 8, the participants selected “self” created stories more than others to teach content (93.5%). Having students create digital stories to learn content was also the second most selected item by participants with 90.3%, indicating that they might have their students use digital storytelling for such a pursuit.

Table 8

*Future Use and Implementation of Digital Storytelling (n=31)*

| Items                                                                            | “Yes”<br>% | “No”<br>% |
|----------------------------------------------------------------------------------|------------|-----------|
| I might use digital stories to create my own stories to teach content            | 93.5       | 6.5       |
| I might have students to create their own digital stories to learn content       | 90.3       | 9.7       |
| I might use digital stories created by self and others to teach students content | 80.6       | 19.4      |
| I might use digital stories created by others to teach students content          | 74.2       | 25.8      |

Three main themes emerged from responses for the open ended item, “How do you think you might use digital storytelling?” in Survey 1. As shown in Table 9, most of the responses for the use of digital storytelling in the classroom fell into “teaching a subject or content area” category. The following sample responses were considered under this theme: “I think I’ll use it to introduce some of the units I use in my art classes;” “Teaching history-telling various stories of history;” and “I would like to put together a story introducing children to the computer, use and care for school.” Responses such as “I believe I will use this skill in my classroom to allow my students to have an outlet for expressing information in a new way” and “have students create a story using the procedures” constituted of the second main theme.

Table 9

*Themes for Open-ended Item “How do you think you might use digital storytelling?”*

| Themes                             | Frequency |
|------------------------------------|-----------|
| Teaching a subject or content area | 14        |
| Student projects or presentations  | 9         |
| Supplement curriculum              | 2         |
| Other                              | 6         |
| Total                              | 31        |

One question from Survey 1 solicited the purposes for which participants might use digital storytelling in the classroom after the workshop. As seen in Table 10, purposes around student outcomes included “research skills,” “organizational skills,” “writing skills,” “technical skills,” and “presentation skills.” A majority of the participants indicated that they would see an impact on the “presentation skills” of their students (74.2%). Only 58.1 percent felt that digital storytelling would impact students’ “technical skills.”

Table 10

*Using Digital Storytelling to Improve Student Skills (n=31)*

| Items                                                                                                  | “Yes”<br>% | “No”<br>% |
|--------------------------------------------------------------------------------------------------------|------------|-----------|
| I want my students to learn to create their own Digital Stories to improve their presentation skills   | 74.2       | 25.8      |
| I want my students to learn to create their own Digital Stories to improve their research skills       | 71.0       | 29.0      |
| I want my students to learn to create their own Digital Stories to improve their writing skills        | 64.5       | 35.5      |
| I want my students to learn to create their own Digital Stories to improve their organizational skills | 61.3       | 38.7      |
| I want my students to learn to create their own Digital Stories to improve their technical skills      | 58.1       | 41.9      |

*Descriptive Context for Research Question 3*

Survey 1 included a question about perceived barriers to using digital storytelling in the classroom. As seen in Table 11, “time issues” was overwhelmingly selected as an expected problem in Survey 1.

Table 11

*Perceived Barriers of Implementation of Digital Storytelling (n=31)*

| Perceived Barriers   | “Yes”<br>% | “No”<br>% |
|----------------------|------------|-----------|
| Time Issues          | 67.7       | 32.3      |
| Access to Hardware   | 25.8       | 74.2      |
| Technical Assistance | 25.8       | 74.2      |
| Access to Software   | 22.6       | 77.4      |
| Other                | 6.5        | 93.5      |

Survey 1 also assessed teachers’ technology proficiency. A teacher’s experience with technology influences how technology will be applied in the classroom. A preponderance of literature indicates that more proficient users of technology are more likely to integrate technology in the classroom. Krueger, Hanson and Smaldino (2000) also reported that teachers with a strong background in technology applications have more success with technology infusion.

As seen in Table 12, the participants in Survey 1 rated themselves “proficient” and “can perform well” on almost all items except “design content specific webpages/sites (2.65)” and “record audio on the computer (2.48).” Large standard deviations on the last four items indicate a sizeable amount of variation among participants in terms of their technology proficiency.

Table 12

*Participants' Technology Proficiency (n=31)*

| Question Item                                                                                                                             | Mean | SD    |
|-------------------------------------------------------------------------------------------------------------------------------------------|------|-------|
| Using the main features of Microsoft Office in Word, Power Point and Excel                                                                | 3.97 | .912  |
| Use internet search engines to find content-specific information                                                                          | 3.87 | .718  |
| Use digital imaging technology (e.g. digital camera, scanner and video camera)                                                            | 3.45 | 1.312 |
| Use basic features (e.g. resize, crop, adjust brightness) of image editing software (e.g. Photoshop, Image Ready, Microsoft Photo Editor) | 3.16 | 1.393 |
| Design content specific webpages/sites (e.g. Using Front Page, Dreamweaver)                                                               | 2.65 | 1.427 |
| Record audio on the computer                                                                                                              | 2.48 | 1.546 |

SD: Standard Deviation

Since strong relationships have been found between teachers' access to technology and their rates of implementation (Martin, Kanaya & Crichton, 2004), the instrument included questions about what kind of access to technology the participants had in their school and home environment in order to assess their likelihood of using digital storytelling in the classroom. (See Appendix E, Instrument 1, Section B.) Understanding teacher's access to technology is also important because it is cited as one of the barriers that teachers face when they integrate technology into their classroom practice (White, Ringstaff & Kelly, 2002).

All of the participants stated that there was a computer available for their use in their classroom or office. "One" was the most reported number of computers, which were available to the participants in the classroom or office with 38.7% (See Table 13).

Table 13

*Number of Computers Available in the Classroom or Office ( $n=31$ )*

| Number of Computers | Frequency | Percent |
|---------------------|-----------|---------|
| 1                   | 12        | 38.7    |
| 2                   | 7         | 22.6    |
| 3                   | 3         | 9.7     |
| 4                   | 2         | 6.5     |
| 5                   | 1         | 3.2     |
| 6-10                | 1         | 3.2     |
| 11-25               | 3         | 9.7     |
| Missing             | 2         | 6.5     |
| Total               | 31        | 100     |

Approximately 84% of the participants in Survey 1 reported that they had internet access in their classrooms, the majority of them (80.6%) having high speed access to the internet (See Table 14).

Table 14

*Internet Access Speed ( $\underline{n}=31$ )*

| Question Item | Frequency | Percent |
|---------------|-----------|---------|
| Classroom     |           |         |
| Dial-up       | 1         | 3.2     |
| High Speed    | 25        | 80.6    |
| N/A           | 5         | 16.1    |
| Total         | 31        | 100     |
| Home          |           |         |
| Dial-up       | 7         | 22.6    |
| High Speed    | 24        | 77.4    |
| Total         | 31        | 100     |

Approximately half of the participants (52%) had one or two computer labs in their schools (See Appendix H, Table 15a) with 21-30 computers for each lab being reported as the modal response (41.9%) (See Appendix H, Table 15b). All of the teachers reported that their school computer labs had internet access.

The participants were also asked if they were able to download or install software to the computers in their schools. Only 45.2% of the participants indicated that they were able to download or install software to their classroom computers. School labs were reported as being less available for downloading or installing programs by the teachers (See Table 16).

Table 16

*Install or Download Software ( $n=31$ )*

| Location   | “Yes”<br>% | “No”<br>% |
|------------|------------|-----------|
| Classroom  | 45.2       | 54.8      |
| Home       | 87.1       | 12.9      |
| School Lab | 6.5        | 93.5      |
| Office     | 25.8       | 74.2      |

As seen in Table 17, the analysis of the question items related to “access to peripherals” revealed that almost all of the participants in Survey 1 had access to a “digital camera” in their schools (96.7%), while “computer microphone” was the least accessible peripheral (56.7%) in the school. A similar pattern was true for participants’ access to these peripherals at home (See Table 17).

Table 17

*Access to Peripherals ( $\underline{n}=31$ )*

| Location            | “Yes”<br>% | “No”<br>% |
|---------------------|------------|-----------|
| School              |            |           |
| Digital Camera      | 96.7       | 3.3       |
| Scanner             | 73.3       | 26.7      |
| Video Camera        | 63.3       | 36.7      |
| Computer Microphone | 56.7       | 43.3      |
| Other               | 16.7       | 83.3      |
| Home                |            |           |
| Digital Camera      | 82.8       | 17.2      |
| Scanner             | 55.2       | 44.8      |
| Video Camera        | 44.8       | 55.2      |
| Computer Microphone | 48.3       | 51.7      |
| Other               | 6.9        | 93.1      |

*Comparison of non-respondents and respondents to second survey*

The second survey was administered one semester after the training in the beginning of spring 2006. The number of respondents to the second survey was 18 out of 31 original respondents. This was partly because of the long time period between the two data collection points. Even though several contacts were made to ensure that participants would not lose interest in the researched topic between the two administration points, the

length of time between the two data points and technical difficulties when contacting participants, such as bounced back emails or no contact information, may have reduced the response rate for the second survey.

A basic descriptive analysis was performed to see the difference between the two groups: non-respondents (Group 1,  $n=13$ ) and respondents (Group 2,  $n=18$ ) to the second survey. Frequency analyses of responses on first survey items for the two groups are presented in Table 18, Table 19 and Table 20. Descriptive analysis of demographic information such as gender, ethnicity and age did not yield important results and did not show a significant difference between the two groups. In addition, there was not a comparable difference between the two groups in terms of their teaching experience and subjects taught except that there was a notable difference in the number of technology teachers in all subject areas. Group 2 had more technology teachers than Group 1, suggesting that technology teachers responded to the second survey more than any other teacher group (Table 19). Group 1 consisted of more elementary school and less high school teachers than Group 2. The number of middle school teachers for both groups was almost the same (See, Table 18).

Table 18

*Frequency Analysis of Responses on First Survey Items for the Two Groups**(Demographics)*

| Item      | Sub-item         | Non-<br>Respondents                      | Respondents                              |
|-----------|------------------|------------------------------------------|------------------------------------------|
|           |                  | (Group1, $\underline{n}=13$ )<br>Percent | (Group2, $\underline{n}=18$ )<br>Percent |
| Gender    | Male             | 7.1                                      | 11.1                                     |
|           | Female           | 92.9                                     | 88.9                                     |
| Ethnicity | White            | 42.9                                     | 61.1                                     |
|           | African-American | 21.4                                     | 16.7                                     |
|           | Hispanic         | 28.6                                     | 11.1                                     |
|           | Asian-American   | 0                                        | 11.1                                     |
|           | Other            | 7.1                                      | 0                                        |
| Age       | 26-30            | 35.7                                     | 16.7                                     |
|           | 31-35            | 7.1                                      | 22.2                                     |
|           | 36-40            | 7.1                                      | 5.6                                      |
|           | 41-45            | 21.4                                     | 16.7                                     |
|           | 46-50            | 14.3                                     | 11.1                                     |
|           | 51-55            | 7.1                                      | 11.1                                     |
|           | 56-60            | 0                                        | 11.1                                     |
|           | 61-65            | 7.1                                      | 5.6                                      |

Table 18 (Continued)

|                     |             |      |      |
|---------------------|-------------|------|------|
| Teaching Experience | First Year  | 0    | 5.6  |
|                     | 2-3 years   | 21.4 | 0    |
|                     | 4-7 years   | 28.6 | 33.3 |
|                     | 8-12 years  | 21.4 | 22.2 |
|                     | 13-20 years | 14.3 | 33.3 |
|                     | 21-29 years | 14.3 | 5.6  |
|                     |             |      |      |
| Grade Level         | Elementary  | 42.9 | 22.2 |
|                     | Middle      | 35.7 | 38.9 |
|                     | High School | 21.4 | 38.9 |

Table19

*Analysis of Responses on First Survey Items for the Two Groups (Subject Taught)*

| Item           | Sub-item                    | Non-<br>Respondents<br>(Group1,<br><u>n</u> =13)<br><u>n</u> | Respondents<br>(Group2, <u>n</u> =18)<br>Percent<br><u>n</u> |
|----------------|-----------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
|                |                             |                                                              |                                                              |
| Subject Taught | Art                         | 3                                                            | 5                                                            |
|                | Biological Sciences         | 1                                                            | 2                                                            |
|                | Chemistry                   | 1                                                            | 1                                                            |
|                | English/Language Arts       | 6                                                            | 5                                                            |
|                | Health Science              | 1                                                            | 1                                                            |
|                | Geosciences                 | 2                                                            | 1                                                            |
|                | Industrial/Technology       | 1                                                            | 5                                                            |
|                | Language other than English | 2                                                            | 2                                                            |
|                | Mathematics                 | 4                                                            | 3                                                            |
|                | Music                       | 3                                                            | 1                                                            |
|                | Physical Education          | 0                                                            | 1                                                            |
|                | Physics                     | 1                                                            | 0                                                            |
|                | Social Studies              | 5                                                            | 5                                                            |
|                | Other                       | 4                                                            | 3                                                            |
|                | Total                       | 34*                                                          | 35*                                                          |

*\*Numbers do not necessarily add up to the number of respondents in both group, because participants might have been selected more than one choice.*

There was a comparable difference on the technology proficiency of the participants. Participants in Group 2 generally rated themselves higher on technology proficiency items than Group 1 (Table 20). For item UT1, there were more expert teachers (38.9% vs. 28.6%) in Group 2 than Group 1. For item UT2, while the majority of the Group 2 teachers (77.8%) rated themselves “Proficient,” Group 1 teachers mostly rated themselves under the category of “Can usually perform alone” (35.7%) and “Proficient” (35.7%). For item UT3, Group 2 consisted of more “Expert” (22.2% vs. 7.1%, respectively) and “Proficient” (16.7% vs. 14.3%, respectively) teachers than Group 1; however, lower-end users were about the same for both groups. For item UT4, even though Group 2 had more “Expert” teachers than Group 1 (33.3% vs. 14.3%, respectively), Group 2 consisted of more “Proficient” teachers (42.9% vs. 27.8%). For item UT5 and UT6, Group 2 had more high end and less low end users than Group 1 (Table 20). These results suggest that, overall; respondents to the second survey were more technology proficient than the non-respondents.

Table 20

*Frequency Analysis of Responses on First Survey Items For the Two Groups (Technology**Proficiency Items)*

| Item                     | Sub-item                      | Non-<br>Respondents<br>(Group1, n=13)<br>Percent | Respondents<br>(Group2, n=18)<br>Percent |
|--------------------------|-------------------------------|--------------------------------------------------|------------------------------------------|
| UT1.Using the main       | Cannot Perform                | 0                                                | 0                                        |
| features of Microsoft    | Can Perform with Help         | 7.1                                              | 0                                        |
| Office in Word, Power    | Can usually perform alone     | 28.6                                             | 33.3                                     |
| Point and Excel.         | Proficient (Can perform well) | 35.7                                             | 27.8                                     |
|                          | Expert (Can teach others)     | 28.6                                             | 38.9                                     |
|                          | Total                         | 100.0                                            | 100.0                                    |
| UT2.Use internet search  | Cannot Perform                | 0                                                | 0                                        |
| engines to find content- | Can Perform with Help         | 0                                                | 5.6                                      |
| specific information.    | Can usually perform alone     | 35.7                                             | 11.1                                     |
|                          | Proficient (Can perform well) | 35.7                                             | 77.8                                     |
|                          | Expert (Can teach others)     | 28.6                                             | 5.6                                      |
|                          | Total                         | 100.0                                            | 100.0                                    |
| UT3.Design content       | Cannot Perform                | 21.4                                             | 27.8                                     |
| specific webpages/sites  | Can Perform with Help         | 28.6                                             | 27.8                                     |
| (e.g. Using Front Page,  | Can usually perform alone     | 28.6                                             | 5.6                                      |
| Dreamweaver)             | Proficient (Can perform well) | 14.3                                             | 16.7                                     |
|                          | Expert (Can teach others)     | 7.1                                              | 22.2                                     |
|                          | Total                         | 100                                              | 100.0                                    |

Table 20 (Continued)

|                            |                               |       |       |
|----------------------------|-------------------------------|-------|-------|
| UT4.Use digital imaging    | Cannot Perform                | 7.1   | 5.6   |
| technology (e.g. digital   | Can Perform with Help         | 28.6  | 22.2  |
| camera, scanner and video  | Can usually perform alone     | 7.1   | 11.1  |
| camera)                    | Proficient (Can perform well) | 42.9  | 27.8  |
|                            | Expert (Can teach others)     | 14.3  | 33.3  |
|                            | Total                         | 100.0 | 100.0 |
| UT5.Use basic features     | Cannot Perform                | 21.4  | 11.1  |
| (e.g. resize, crop, adjust | Can Perform with Help         | 28.6  | 5.6   |
| brightness) of image       | Can usually perform alone     | 7.1   | 38.9  |
| editing software (e.g.     | Proficient (Can perform well) | 28.6  | 16.7  |
| Photoshop, Image Ready,    | Expert (Can teach others)     | 14.3  | 27.8  |
| Microsoft Photo Editor)    | Total                         | 100.0 | 100.0 |
| UT6.Record audio on the    | Cannot Perform                | 42.9  | 33.3  |
| computer                   | Can Perform with Help         | 21.4  | 16.7  |
|                            | Can usually perform alone     | 14.3  | 16.7  |
|                            | Proficient (Can perform well) | 7.1   | 11.1  |
|                            | Expert (Can teach others)     | 14.3  | 22.2  |
|                            | Total                         | 100.0 | 100.0 |

There was not a big difference between the two groups in terms of internet access at home, school and classroom. In addition to this, the number of available computers at classroom or school labs was not very different for both groups. However, more Group 2 teachers indicated that they were able to download and install software to their computers in all locations--home, classroom, school lab and office--than Group 1 teachers (Table

21). Another interesting finding was that Group 2 teachers had more access to peripherals such as digital cameras, video cameras and microphones except scanners, both at home and school (Table 21).

Table 21

*Frequency Analysis of Responses on First Survey Items For the Two Groups (Access to Technology)*

| Item                                             | Sub-item       | Non-Respondents               | Respondents                   |
|--------------------------------------------------|----------------|-------------------------------|-------------------------------|
|                                                  |                | (Group1, $\underline{n}$ =13) | (Group2, $\underline{n}$ =18) |
|                                                  |                | Percent                       | Percent                       |
| I am able to download and install software at... | Home           | 78.6                          | 94.4                          |
|                                                  | School Lab     | 0                             | 11.1                          |
|                                                  | Class          | 42.9                          | 44.4                          |
|                                                  | Office         | 14.3                          | 33.3                          |
| I have access to... at my home                   | Digital Camera | 75                            | 89.9                          |
|                                                  | Scanner        | 58.3                          | 55.6                          |
|                                                  | Video Camera   | 33.3                          | 55.6                          |
|                                                  | Microphone     | 25                            | 61.1                          |
| I have access to... at my school                 | Digital Camera | 92.3                          | 100                           |
|                                                  | Scanner        | 84.6                          | 66.7                          |
|                                                  | Video Camera   | 61.5                          | 61.1                          |
|                                                  | Microphone     | 53.8                          | 55.6                          |

More teachers in Group 2 (33.3%) were also aware of digital storytelling before they participated in the workshop than teachers in Group 1 (14.3%) (Table 22). Another

notable difference was in teachers' interests in receiving more training in different areas. While Group 1 teachers were more interested in additional training in digital photography, video and audio recording, namely technology-related skills, Group 2 teachers were more interested in additional training on script writing and curriculum integration (Table 22).

Table 22

*Frequency Analysis of Responses on First Survey Items for the Two Groups (Awareness of Digital Storytelling)*

| Item                                                                         | Sub-item               | Non-Respondents                          | Respondents                              |
|------------------------------------------------------------------------------|------------------------|------------------------------------------|------------------------------------------|
|                                                                              |                        | (Group1, $\underline{n}$ =13)<br>Percent | (Group2, $\underline{n}$ =18)<br>Percent |
| Were you familiar with Digital Storytelling before registering for workshop? | Yes                    | 14.3                                     | 33.3                                     |
|                                                                              | No                     | 85.7                                     | 66.7                                     |
| I would be interested in additional training in...                           | Digital Photography    | 78.6                                     | 77.8                                     |
|                                                                              | Video Recording        | 64.3                                     | 61.1                                     |
|                                                                              | Audio Recording        | 57.1                                     | 38.9                                     |
|                                                                              | Script Writing         | 42.9                                     | 55.6                                     |
|                                                                              | Curriculum Integration | 42.9*                                    | 61.1*                                    |

*\*Numbers don't add up to 100 in both groups because participants selected more than one choice.*

There was also a noteworthy difference on perceived barriers between the two groups. In all perceived barriers items, Group 2 teachers anticipated fewer problems or barriers than Group 1 teachers (Table 23).

Table 23

*Frequency Analysis of Responses on First Survey Items for the Two Groups (Perceived Barriers)*

| Item               | Sub-item             | Non-Respondents               | Respondents                   |
|--------------------|----------------------|-------------------------------|-------------------------------|
|                    |                      | (Group1, $\underline{n}$ =13) | (Group2, $\underline{n}$ =18) |
|                    |                      | Percent                       | Percent                       |
| Perceived Barriers | Access to Hardware   | 35.7                          | 22.2                          |
|                    | Access to Software   | 28.6                          | 16.7                          |
|                    | Technical Assistance | 35.7                          | 22.2                          |
|                    | Time Issues          | 78.6*                         | 61.1*                         |

*\*Numbers don't add up to 100 in both groups because participants selected more than one choice.*

The comparison of the participants of Survey 1 and Survey 2 indicated the basic significant differences between the two groups, such as technology proficiency, access to technology, and perception of possible barriers. The differences between the two groups are significant, and these implications will be discussed in Chapter 5.

In summary, the descriptive results presented above provided a framework for answering the research questions for the study. This was the context in which the original 31 participants began their year of using digital stories in the classroom. This contextual information exhibited how the participants walked away with a general big-picture attitude. The implications of these results along with results to the research questions will be discussed in Chapter 5.

### *Results for Research Question 1*

As seen in Table 24, more than half of the respondents to Survey 2 indicated that they did not use digital storytelling in the classroom (55.5%). Only eight of the Survey 2 participants (44.5%) used at least one type of digital storytelling (See Table 24 and 25). When the participants asked how they used digital stories, “I created *my own* digital stories” was the most selected response (n=8, 44.5%) (See, Table 25). Other responses, such as “I used digital stories created by *others*,” “I used digital stories created by *self and others*” and “I had my *students* to create their own digital stories” were selected by the same number of participants (n=6).

Table 26 lists the *frequency* of using digital stories by the participants. The general pattern from the results indicates that while the frequency of using digital stories varied for each digital story type based on who created the story, overall, digital stories created by *students* were used more frequently than other digital story types. Digital stories created by *self and other* and by *self* only were used less frequently by the participants (See Table 26).

Table 24

#### *Use of Digital Storytelling among Survey 2 Participants (N=18)*

| Use of Digital Storytelling          | n  | Percent |
|--------------------------------------|----|---------|
| Digital storytelling used            | 8  | 44.5    |
| Digital storytelling <i>not</i> used | 10 | 55.5    |
| Total                                | 18 | 100     |

Table 25

*Types of Digital Storytelling Used by Survey 2 Participants (N=18)*

| Type of Digital Storytelling used                                                  | “Yes”<br>n/Percent | “No”<br>n/Percent |
|------------------------------------------------------------------------------------|--------------------|-------------------|
| I created <i>my own</i> digital stories to teach content                           | 8/44.5             | 10/55.5           |
| I used digital stories created by <i>others</i> to teach students content          | 6/33.3             | 12/66.6           |
| I used digital stories created by <i>self and others</i> to teach students content | 6/33.3             | 12/66.6           |
| I had <i>students</i> create their own digital students to learn content           | 6/33.3             | 12/66.6           |

Table 26

*Frequency of Digital Storytelling Use among Survey 2 Participants (N=18)*

| Question Items                                                                     | n  | Percent |
|------------------------------------------------------------------------------------|----|---------|
| <i>I created my own digital stories to teach content</i>                           |    |         |
| Once in the past semester                                                          | 4  | 22.2    |
| 2-4 times in the first semester                                                    | 3  | 16.6    |
| More than 4 times in the past semester                                             | 1  | 5.5     |
| I didn't use digital stories in the classroom                                      | 10 | 55.5    |
| <i>I used digital stories created by others to teach students content</i>          |    |         |
| Once in the past semester                                                          | 3  | 16.6    |
| 2-4 times in the first semester                                                    | 1  | 5.5     |
| More than 4 times in the past semester                                             | 2  | 11.1    |
| I didn't use digital stories in the classroom                                      | 12 | 66.6    |
| <i>I used digital stories created by self and others to teach students content</i> |    |         |
| Once in the past semester                                                          | 3  | 16.6    |
| 2-4 times in the first semester                                                    | 3  | 16.6    |
| I didn't use digital stories in the classroom                                      | 12 | 66.6    |
| <i>I had students create their own digital students to learn content</i>           |    |         |
| Once in the past semester                                                          | 2  | 11.1    |
| 2-4 times in the first semester                                                    | 2  | 11.1    |
| More than 4 times in the past semester                                             | 2  | 11.1    |
| I didn't use digital stories in the classroom                                      | 12 | 66.6    |

In this section, the results for Research Question 1 were described. These results included whether or not the Survey 2 participants used digital storytelling in the classroom, and the type and frequency of digital storytelling used, by the participants who used digital stories in the classroom.

### *Results for Research Question 2*

An analysis of the open-ended question item in Survey 2 “How did you and your students use digital stories in the classroom?” revealed two themes: “projects that are created by students” and “teacher created stories to teach content” (See Table 27). Both themes had an equal frequency.

Table 27

*Themes for Open-ended Item “How did you and your students use digital stories in the classroom?” (n=8)*

| Themes                             | Frequency | Percent |
|------------------------------------|-----------|---------|
| Teaching a subject or content area | 5         | 50      |
| Student projects or presentations  | 5         | 50      |
| Total                              | 10*       | 100     |

*\*Numbers do not necessarily add up to 8, because responses might be assigned to more than one category.*

The results of open-ended question ““How did you and your students use digital stories in the classroom?” in Survey 2 revealed that some of the examples of the first theme, “digital stories used by students,” included a video yearbook, history fair project, descriptions of field trips taken, and social and science investigation presentations.

Additionally, for the second theme resulting from the analysis of the question, “teacher created stories to teach content,” example uses included using digital stories as opposed to PowerPoint, highlighting a time in history, and sharing personal experiences.

Three teachers were selected from the teachers who used digital storytelling in the classroom for the interviews. The analysis of these interviews showed that all of these teachers had their students create their own stories for various reasons such as class projects or presentations with the exception of interviewee #2, who also created stories himself to share with his students. (See Table 33 and Appendix-I-INTERVIEWS.)

As seen in Table 28, “stories that inform or instruct” were the most used digital story type by the Survey 2 respondents who used digital storytelling in the classroom, followed by “personal or narrative stories” and “stories that re-tell historical events.”

Table 28

*Results for Types of Digital Stories Used In the Classroom (N=8)*

| Types of Digital Storytelling          | N  |
|----------------------------------------|----|
| Stories that inform or instruct        | 6  |
| Personal or narrative stories          | 5  |
| Stories that re-tell historical events | 4* |

*\*Numbers do not necessarily add up to 8 because the participants might select more than one choice.*

Each interviewed teacher used a different type of digital storytelling. Interviewee #1 used stories that re-tell historical events; digital stories in her class focused on periods of time or events, especially stories related to history, political science and geography.

Interviewee #2 was a 5<sup>th</sup> grade teacher in a constructivist, project-based school in which every student activity results in an oral presentation. The stories created in his class were mostly in the form of stories that inform or instruct on a subject. His students created digital stories for projects in science, history and creative writing. Interviewee #3 had her computer animation class students create digital stories on their personal lives as the final project of the year.

The results of the analysis of Survey 2 and the interviews also displayed that teachers used digital storytelling not only in the classroom but also outside of the classroom and in cross-curriculum platforms with other faculty. As seen in Table 29, almost 38% of the teachers who used digital storytelling in the classroom also taught digital storytelling to faculty members in their schools; 25% of the teachers who used digital storytelling in the classroom also taught digital storytelling to family members.

Table 29

*Use of Digital Storytelling Outside of the Classroom (n=8)*

| Question Items                                                | n | Percent |
|---------------------------------------------------------------|---|---------|
| I taught Digital Storytelling to faculty members in my school | 3 | 37.5    |
| I taught Digital Storytelling to family members               | 2 | 25      |
| I did not use digital stories outside of the classroom        | 1 | 12.5    |
| Other                                                         | 2 | 25      |
| Total                                                         | 8 | 100     |

Results for interview question, “Was there a cross-curriculum use of digital storytelling in your school?” revealed that all of the teachers shared digital stories with other teachers in their schools. Interviewee #3 reported that an English teacher in her school implemented digital storytelling after she gave a mini-workshop on digital storytelling in the school. Interviewee #1 also exchanged digital stories for cross-curriculum purposes in her school. Since Interviewee #2 was teaching all subjects to his 5<sup>th</sup> grade students, he explained that he used digital storytelling in various subjects, such as history, science and creative writing. Interviewee #2 was one of the teachers who taught digital stories to other teachers, stating “Everybody that I have shown it to, they just loved it. Teachers and students absolutely love it. And a lot of people are using it. It is great, useable working tool.”

*Purposes around Student Outcomes: Observed Impacts*

As the research questions were tightly defined in the beginning of the research study, thorough the process of data analysis, these questions actually became more refined questions to better understand the use of digital stories in the classroom. In particular, Research Question 2 was naturally extended because the purposes asked in this question centered around student outcomes. Therefore, the analysis necessitated the discussion of observed student impacts which naturally came about through the analysis process to fully answer Research Question 2.

As can be seen in Table 30, the analysis of the question items on “impacts” in Survey 2 yielded mean scores ranging from 3.43 to 4.17. A mean scale score close to the value of 5 indicates that the participants’ “strongly agreed” with the statement and a mean scale score close the value of 1 would indicate that the participants “strongly disagreed”

with the statement. Therefore, participants mostly agreed with these statements. “Increase in technical skills” had the highest mean among all the impacts with 4.17. In addition, high mean values for the next two items also indicated that the participants who used digital storytelling in the classroom also agreed that they observed “increased engagement in the subject taught” and “increase in presentation skills” among their students.

Table 30

*Observed Impacts with Students (N=8)*

| Question Item                                     | Mean | SD   |
|---------------------------------------------------|------|------|
| My students increased their technical skills      | 4.17 | .753 |
| My students engaged more in the subject taught    | 4.14 | .378 |
| My students increased their presentation skills   | 4.00 | .577 |
| My students increased their research skills       | 3.86 | .690 |
| My students increased their organizational skills | 3.86 | .378 |
| My students performed better academically         | 3.57 | .535 |
| My students increased their writing skills        | 3.43 | .535 |

The interviewed teachers were asked “*What were the observed effects on students?*” to better understand the purposes around student outcomes by teachers who used digital storytelling in the classroom. The main themes that emerged from all interviews were increased technical skills, increased presentation skills, and increased motivational (engagement) levels of students. All of the interviewed teachers indicated

that their students were more motivated to do research on a subject when the students used digital storytelling. Interviewee #1 described the increase in her students' motivation and technical skills:

Their [students'] technical skills certainly improved magnificently, but it [digital storytelling] also generated greater interest in history or in political science. They were able to research and many times could select their own topics with my approval and so it generated a more whole interest in history and in conducting historical research (R.Moses, personal interview, May 31, 2006).

Interviewee #2 also expressed that his students were able to go more in depth. He also thought that this was because they had to present their projects:

They [students] would do a little more research than if they were just writing a paper. They knew that they weren't just writing a research paper and turning it into me. They were going to be presenting this material to me and to their peers and oftentimes to the greater school community and their parents. We do a world bazaar where each classroom either picks a country or an area. We did this year for the world bazaar, we did South America. And the students created digital stories about the country they were researching on the continent of South America. Then we had a school wide sort of bazaar where they would set up their laptops out in the common area and then people came by and put the headphones on and watched their digital story about the country (R.Jarrell, personal interview, May 31, 2006).

Another effect observed by Interviewee #1 was increased levels of presentation skills with the students:

They became very poised, very confident in making presentations standing before a class and starting, "this is the beginning", and "here is the end", and "do you have any questions", and being able to respond to those questions. But they became much more sophisticated.

When Interviewee #3 was asked about whether digital storytelling had an effect on skills related to researching, writing or making presentations for an audience, she stated:

I think it did because they had to write out what they were going to say. I think that that [digital storytelling] helped. We didn't do as much research as we could have if it would've been a different project, but this was just for them (N.Hayes, personal interview, May 31, 2006).

The interviewed teachers were also asked “*What do you think made students motivated about digital storytelling?*” Interviewee #1 explained why she thought that students were very motivated with the digital storytelling approach: “It is expansion of their electronic skills and also a new avenue to explore. It’s like they’re creating the new Hollywood” (R.Moses, personal interview, May 31, 2006). According to Interviewee #2, simply getting to use computers and technology while creating digital stories was a motivating factor for his students: “They are 21<sup>st</sup> century kids and they like to do anything on the computer. It motivated them to a higher degree, I believe” (R.Jarrell, personal interview, May 31, 2006). Interviewee #3 thought that creating a story about themselves and having the chance of self expression made them very motivated about the project: “I think that this is absolutely, by far, their favorite project to do. It was an inspiration for most of them; they were so inspired to create... that they got to tell a story about themselves” (N.Hayes, personal interview, May 31, 2006).

As part of the observed impacts, interviewed teachers were also asked about if they observed effects on their students’ academic performance. Two of the interviewed teachers thought that the digital storytelling strategy had an affect on students’ academic performance. When interviewee #1 was asked this question, she explained: “Yes. It [using digital storytelling] made them [students] more excited even about coming to class” (R.Moses, personal interview, May 31, 2006).

Interviewee #2 pointed out that students really enjoyed working with digital stories; in return, it had a positive effect on their academic performance:

Especially I think that the students that may have been less than motivated about just writing a paper did see academic improvement because they actually enjoyed making the digital stories. So it became that they were more “into” it because it seemed less academic and more creative (R.Jarrell, personal interview, May 31, 2006).

In this section, the results for Research Question 2 were described. These results included how teachers used digital storytelling in the classroom; the types of digital storytelling most used by Survey 2 participants; whether Survey 2 and interviewed teachers used digital storytelling for different purposes, such as a cross-curriculum or outside use; and the purposes for using digital stories around student outcomes as it pertains to observed impacts on the students.

### *Results for Research Question 3*

In Survey 2, 10 of the 18 participants indicated that they didn't use digital storytelling in the classroom. This group of participants was asked about the barriers that kept them from using digital stories in the classroom in Survey 2. "Time issues" was the highest ranked barrier followed by "access to hardware." If "access to hardware" and "access to software" were to be considered in the same category as "access to technology," this combined category would be the top ranked barrier with almost 90% of participants selecting this as a barrier (See Table 31).

Table 31

*Barriers in Implementation of Digital Storytelling (n=10)*

| Question Items                          | “Yes”<br>% | “No”<br>% |
|-----------------------------------------|------------|-----------|
| Time Issues                             | 66.7       | 33.3      |
| Access to hardware                      | 55.6       | 44.4      |
| Access to software                      | 33.3       | 66.7      |
| No barriers                             | 22.2       | 77.8      |
| Lack of technical assistance or support | 22.2       | 77.8      |
| Other                                   | 11.1       | 88.9      |

Open-ended responses for “*Barriers in Implementation of Digital Storytelling*” in Survey 2 detailed the challenges participants experienced. Most of these responses were related to “access to technology,” such as “access to software” and, in particular, limited “access to hardware.” Responses revolved around students not having access to computers, outdated computers or lacking computer labs, getting to a computer lab as hardware related problems; and software not approved by the district, not having the necessary software installed in the lab computers, and not having the necessary operating system to run the software as the software related problems.

Time issues were also a reported barrier for not using digital stories in the classroom. Especially with so much emphasis on “state assessment testing,” teachers reported there would not be enough time to integrate digital storytelling into their teaching.

Interviewed teachers did not report major problems. Interviewee #2 reported no software problems. He only faced a little difficulty burning digital stories onto DVDs. Graduate students helped solve the problem for him. Interviewee #1's biggest problem was not having computers in the classroom. She had to have her students create their digital stories at home, and most of the work was given as homework. For interviewee #3, time issues were the biggest concern. She thought that the timing of the project in the semester could have been different.

Given the fact that "access to hardware" was a major problem for teachers who didn't use digital stories in the classroom (See Table 31), one interesting finding was in the case of lack of computers in the classroom. Teachers tended to have students create digital stories at home in these cases. For example, interviewee #1 said "We had no computers in the class. So, everything was homework; they did all the technical work at home" (R.Moses, personal interview, May 31, 2006). This situation was contrary to the results from Survey 1, which showed that "classroom" was the modal response for the location of both teacher and student-created stories.

In Survey II, the participants were also asked about their future plans to use digital storytelling if they did not use it in the classroom in the semester. Therefore, Table 32 lists the future plans for using digital storytelling by this group. As seen from the table, all of these participants (n=10) indicated that they had plans to use digital stories in the future. The results also revealed that the same group would prefer letting their students create their own digital stories to learn content more (50%) than any other choices, such as using digital stories created by *self and/or others* to teach content.

Table 32

*Future Plans of Using Digital Storytelling by the Participants Who Didn't Use Digital**Storytelling (N=10)*

| Response                                                                                  | Yes<br>n/Percent | No<br>n/Percent | Total<br>n/Percent |
|-------------------------------------------------------------------------------------------|------------------|-----------------|--------------------|
| No plans at this point to use digital storytelling in the future                          | 0/0              | 10/100          | 10/100             |
| I plan to create <i>my own</i> digital stories to teach content                           | 3/30             | 7/70            | 10/100             |
| I plan to use digital stories created by <i>others</i> to teach students content          | 2/20             | 8/80            | 10/100             |
| I plan to use digital stories created by <i>self and others</i> to teach students content | 4/40             | 6/60            | 10/100             |
| I plan to have students create their own digital stories to content                       | 5/50             | 5/50            | 10/100             |
| Other                                                                                     | 3/30             | 7/70            | 10/100             |

In this section, the results for Research Question 3 were described. These results included the barriers teachers who did not use digital storytelling faced in the implementation of digital storytelling in the classroom; the data was drawn from the combination of Survey 2 close and open-ended responses as well as from interviews. Future plans for using digital storytelling in the classroom by the same group of teachers were also among the results presented in this section. Some of the responses and comments of interviewees not presented in this chapter will be utilized in Chapter 5 to support the findings of the first and second surveys. Moreover, the results of the interviews were also presented in a table format (Table 33).

Table 33

*Summary Table for Responses of Interviewees*

| Question                                                                 | Interviewee #1                                                                                                                                                                                                                                                                                                                                               | Interviewee #2                                                                                                                                                                                                                               | Interviewee #3                                                                                                                                                                         |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Have you used digital storytelling?                                      | Yes                                                                                                                                                                                                                                                                                                                                                          | Yes                                                                                                                                                                                                                                          | Yes                                                                                                                                                                                    |
| How did you use digital storytelling?                                    | “Students created and presented digital stories on history, political science and geography.”                                                                                                                                                                                                                                                                | “Students used it in conjunction with their oral presentations of their subject matter, be it science or history or even creative writing.”                                                                                                  | “Students used it for their final project. They created stories about their lives.”                                                                                                    |
| Was there a cross-curriculum use of digital storytelling in your school? | “I don’t know that they used the process in other classes, but I certainly know that their instructors were aware. And at my school at faculty meetings I would sometimes show a presentation done by one of the students, kind of that cross curriculum type of exchange.”                                                                                  | “Yes. They [students] did use it [digital storytelling] in science. We didn’t really have to use it in any math applications, but we could have.”                                                                                            | “We do have another teacher that teaches the same thing and she did a similar project with her students, as far as, like the ‘My Life’ type of project.”<br>.                          |
| What were the observed effects on students?                              | “Their [students] technical skills certainly improved magnificently, but it [digital storytelling] also generated greater interest in history or in political science. They were able to research and many times could select their own topics with my approval and so it generated a whole more interest in history and in conducting historical research.” | “In creating this story in preparation for oral presentation, what I found was that they were able to go more in depth. They liked to have 10 or 20 slides. So they would do a little more research than if they were just writing a paper.” | “We didn’t do as much research as we could have if it would’ve been a different project, but this was just for them. It helped that they had to write up what they were going to say.” |

Table 33 (Continued)

|                                                                                      |                                                                                                                              |                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Do you think creating digital stories had affected their academic performance?       | “Yes. It made them more excited even about coming to class.”                                                                 | “Yes, especially I think that the students that may have been less than motivated about just writing a paper did see academic improvement because they actually enjoyed making the digital stories. So it became that they were more “into” it because it seemed less academic and more creative.” | N/A                                                                                                                                                                                                 |
| What do you think that made students motivated about digital storytelling?           | “It is expansion of their electronic skills and also a new avenue to explore. It’s like they’re creating the new Hollywood.” | “They are 21 <sup>st</sup> century kids and they like to do anything on the computer. It motivated them to a higher degree, I believe.”                                                                                                                                                            | “I think that this is absolutely, by far, their favorite project to do. It was an inspiration for most of them; they were so inspired to create... that they got to tell a story about themselves.” |
| What have you observed with presentation skills?                                     | “They became very poised, very confident in making presentations standing before a class”                                    | N/A                                                                                                                                                                                                                                                                                                | N/A                                                                                                                                                                                                 |
| Did your teaching style change? If yes, How?                                         | “Yes. It allowed me to incorporate more technology into the curriculum and also enabled us to cover more material faster.”   | “I think it added another dimension to my teaching style. It’s not just lecture or not just presenting the material.”                                                                                                                                                                              | “I don’t know that it changed my teaching style.”                                                                                                                                                   |
| What type of digital stories have you used?                                          | “Stories that retell historical events.”                                                                                     | “Stories that informs or instructs.”                                                                                                                                                                                                                                                               | “Personal stories.”                                                                                                                                                                                 |
| Have you faced any barriers? If yes, what were they? How did you tackle the problem? | “Our difficult part was that we had no computers in the classroom. Basically everything was homework.”                       | “As far using the software, none whatsoever.”                                                                                                                                                                                                                                                      | “I think time was a big factor for us.”                                                                                                                                                             |

Table 33 (Continued)

|                                                                                         |                                                                                                                                                                                                      |                                                                                                                        |                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| How did you find the workshop?                                                          | “I thought it [the length of the workshop] was quite good as a matter of fact. We were able to receive instruction and apply it. We had a media help there and it was produced a product.”           | N/A                                                                                                                    | “I think it was great. I like being able to have the time to go in and create my own project, bring in my own things, the time where I could go into a room and narrate my own project. I thought that was great.” |
| Do you have anything noteworthy to mention?                                             | “I brought two classes, two different years, to your lab. And I found that kind of intense instruction very, very helpful and they were very interested and they stayed attentive the whole time.”   | “It was especially helpful with marginal students.”                                                                    | N/A                                                                                                                                                                                                                |
| Did you observe “electronic encyclopedic entry” effect in your work with your students? | “To write more and I had to caution them about that, that they couldn’t just cut and paste. That they actually had to summarize or something of that nature, that they just couldn’t cut and paste.” | “Yes. They’re not creative thinkers at this point, most of them. If I said the majority of them, that’s what they do.” | N/A                                                                                                                                                                                                                |

### *Summary*

This chapter first described the main sources of information—participant interviews and the contextual background for Survey 2—used to draw conclusions for the research questions. The results of the study were presented in narrative and tabular form. The next and the final chapter will discuss these results and their implications for the practice of educators and future research.

## Chapter 5

### Interpretations, Conclusions and Implications

The purpose of the study is to describe teachers' use of digital storytelling in the classroom after attending a summer workshop at the University of Houston, specifically how teachers incorporated this technology tool in the classroom and what kind of challenges they faced in the implementation process.

In order to achieve the above purpose, this study addressed the following three questions:

1. To what extent do teachers trained in the University of Houston's digital storytelling workshop integrate digital storytelling in the classroom?
2. If teachers have used digital stories in the classroom, in what ways have digital stories been used? What purpose did teachers have in using digital stories in the classroom?
3. If digital stories were not used, what were the barriers that kept teachers from using digital storytelling in the classroom?

The previous chapter presented the results obtained by collecting data from survey responses and interviews to these research questions.

#### *Conclusions and Interpretations for Research Question 1*

The Research Question 1 simply inquired as to whether or not and in what frequency teachers trained in the workshops had used digital storytelling in the classroom one semester after the training. As the original participants of the workshops stated in the beginning of the training, the majority of them were not familiar with digital storytelling

before the workshops but had a pretty good idea of what digital storytelling was. When the teachers were asked their likelihood of using digital stories in the classroom, all of the teachers except two stated that they would. One teacher explained, “It’s a fun, easy way to make a presentation but still requires research and organizational skills to complete it. It will improve their knowledge of technology, but they will have fun at the same time.” Teachers also reported that “students learn well with visual content.” Another teacher noted that digital storytelling “should be an option as well as Power Point” because it is “fun and as easy as Power Point but way cooler.” So the big picture after the workshop was that even though the participants were generally unfamiliar with digital storytelling before the workshops, most of them had a good idea of what it could be and also desired to use it in the classroom. However, one semester after the workshops, only 45% of the respondents to second survey indicated that they had used digital storytelling in the classroom. Even though the frequency of using digital stories was varied for each digital story type based on who created the story, the results revealed that stories created by the teachers to teach content was the most popular digital story type. However, teachers more *frequently* resorted to the practice of having students create their own digital stories in the classroom than other methods.

In conclusion, even though almost all of the teachers’ perceptions about using digital stories in the classroom were very positive right after the workshops, in practice, more than half of the teachers followed up upon didn’t use digital storytelling during the implementation period at all. This was an unexpected result because teachers didn’t use digital stories as much as they said they would in this implementation period. The reasons for not using digital storytelling in the classroom, whether it be “the reality of the school

environment” (Sandholtz, 2001) in which the school environment might not be ready for or supportive of the decision to use technology in the classroom or the barriers mentioned in the literature or other reasons will be discussed in the conclusions and interpretations for Research Question 3.

### *Conclusions and Interpretations for Research Question 2*

Research Question 2 attempted to answer how teachers implemented digital storytelling in the classroom as well as their purposes for use, specifically their purposes stemming from student outcomes.

#### *How Digital Storytelling was Used by Teachers in the Classroom*

As explained in the results, most of the teachers trained in the workshops planned to use digital storytelling for “teaching a subject or content area” followed by “student projects or presentations” and “supplement curriculum”. In practice, however, Survey 2 results revealed that there were only two methods with equal frequency by teachers. These methods were the same top two categories perceived by original participants of the study right after the workshop: “teaching a subject or content area,” and “student projects or presentations.” These results suggest that even though, right after the workshop, teachers thought they would use digital stories primarily to teach content in the classroom and possibly, to allow students to create their own digital stories; in reality, digital stories were used as much by the students as by the teachers. One interpretation of this phenomenon is that teachers may have capitalized on the immediate benefits of using digital storytelling with the students, such as the increase in students’ skills and the motivating ability of digital storytelling. Although digital storytelling is already a functional tool to convey desired messages on a topic or subject by the teachers, in

practice it is also a very practical tool that has positive impacts on students and their performances. These impacts on the students will be discussed in detail later in the chapter under the “student impacts” section.

### *Ideas for Using Digital Storytelling by Teachers*

When participants were asked about how they might use digital storytelling in the classroom, there was a broad range of ideas. For example, one teacher stated:

I have already used it (since the class) to create a lesson on ecology, show the new students what they will be doing in class this year, and make a picture documentary of a family reunion. I plan to use this in class to address difficult concepts, leave for a substitute to use when I am gone, record our classroom field trips and show what activities took place. I also will teach my students the program so they can do a careers project with it. The possibilities seem endless. I continue to think of new ideas!  
(Response to open-ended question “How do you think you might use digital storytelling?” in Survey 1)

Another participant explained how he or she anticipated using digital stories: “I would like to show teachers that they can use this for a project instead of a written report, poster, etc. With coordination, the history and English teacher could work together, along with the librarian“  
(Response to open-ended question “How do you think you might use digital storytelling?” in Survey 1).

The actual implementation of digital stories by the teachers showed that there were many ways of using digital stories in the classroom. Example uses for *teacher created stories to teach content* included using digital stories as opposed to PowerPoint, highlighting a time in history, and sharing personal experiences. For example, one teacher explained how she used a digital story to share her experiences with her students: “I used digital storytelling to share with my students my experience as a National Aerospace Scholar at NASA. I shared the research facilities I visited and what I learned at each place” (In response to open ended item “Please give an example of you or your students used digital stories in the classroom” in Survey 2.).

Some of the example uses of digital stories by *students* included video yearbooks, history fair projects, field trips descriptions, social and science investigation presentations, and digital portfolios. For example, one of the interviewed teachers explained how he used digital stories with his elementary school students:

I teach fifth grade, all subjects, and we're a project based school. And so everything we do, every project that we engage in, every activity results in an oral presentation by the students. I do this mainly because this forces them [students] to consider the material from a higher order of the thought processes so that they can then become the teachers as it were. So, they found that Photo Story 3 [digital storytelling software] was a much better presentation instrument than PowerPoint. So, they used it in conjunction with their oral presentations of their subject matter, be it science, history or even creative writing (R.Jarrell, personal interview, May 31, 2006).

He also added that each of his students created at least three digital stories for their digital portfolios. Another example of the use of digital storytelling by *students* was from one of the interviewed teachers. The teacher indicated that two of her students won a history fair with their digital story entry and got to go to the state fair to compete.

Robin (in press) sorts digital stories thematically into three categories: personal or narrative stories, stories that inform or instruct, and stories that re-tell historical events. The review of the literature indicated that there was no research done on what types of stories are used more commonly in K-12 education. However, some studies have suggested that personal narrative types of digital storytelling are very effective in representing an individual's voice and providing valuable opportunities for identity construction (Banaszewski, 2005). Results from Survey 2 indicated that "stories that inform or instruct" were the most used digital story types, followed by "personal or narrative stories" and "stories that re-tell historical events" (Table 18).

The results of the study also displayed that more than half of the teachers used digital storytelling not only in the classroom but also outside of the classroom and in

cross-curriculum purposes with other faculty members in their schools. This stretch shows that digital storytelling has a very broad range of application not limited to in-class settings but also for collaborative cross-curriculum platforms in K-12 education.

*Purposes around Student Outcomes: Observed Impacts*

Through the process of data analysis, research questions actually became more refined in order to better understand the use of digital stories in the classroom. Research Question 2, in particular, was naturally extended because the purposes asked in this question revolved around student outcomes. Therefore, the analysis necessitated the discussion of observed student impacts which naturally came about through the analysis process in order to fully answer the Research Question 2.

Three main impacts on students from the use of digital storytelling in the classroom were revealed by the analysis of the research data results: impacts on 21<sup>st</sup> century skills, impacts on motivation and engagement level, and impacts on special groups of students.

*Impacts on 21<sup>st</sup> Century Skills*

The first theme that emerged from the data was impacts on 21<sup>st</sup> century skills. It is noted in literature that when students actively participate in the creation process of digital storytelling, they most notably develop certain 21<sup>st</sup> century skills, such as information literacy, visual literacy, technological literacy, and media literacy; they become more creative and take more risks; and they can communicate more effectively by using the latest technology to create digital stories (Howell & Howell, 2003; Jakes, 2006; Robin, In press).

When participants were asked about perceived impacts on students in Survey 1, “presentation skills” was rated highest among all categories with 74.2%. “Technical skills” were rated to have the least impact by the teachers. The same question (observed impacts on the students) was asked in Survey 2. However, this time “increase in technical skills” had the highest mean among all the impacts followed by “increase in presentation skills.” Overall, high means scores in these skill items showed that the participants agreed that there were increases in students’ 21<sup>st</sup> century skills. Even though immediately after the workshop teachers anticipated that digital stories would mostly “increase [students’] presentation skills,” once they used digital stories in the classroom with students, they saw that digital stories actually had more impact on “technical skills” than the others.

A similar pattern was observed in responses to the open ended item in Survey 2, “Please give examples of effects you observed with your students after using digital stories in the classroom,” which was created for a better understanding of observed impacts on students. The first theme to emerge from open-ended items was an “increase in technical skills.” For example, one teacher said, “They [students] understood more technology terms (browse to your folder, download, import etc).” The same teacher continued, adding that “they [students] also took time to research copyright for music that they wanted to use,” indicating that her students were also increasing their “media literacy” skills. This information is consistent with literature reporting an increase in students’ media and visual literacy when they create digital stories. Students also learn to critically consume the media they use and become aware of issues such as copyright and the protection of personal work (Howell & Howell, 2003).

When the interviewees were asked about their students' technical skills after the use of digital stories in the classroom, Interviewee #1 said, "Their technical skills certainly improved magnificently." Interviewee #2 raised another point by saying that students "got a lot of technology application instruction out of using photo story;" for example, he had to teach his students about pixels in images when they worked on digital stories.

Presentation skills were also reported to improve. For example, Interviewee #1 said, "They became very poised and confident in making presentations. They became much more sophisticated." This information complies with results from Instrument 1 as more original participants of the workshop indicated that they believed they would see an increase in the "presentation skills" of their students if they were to use digital storytelling with them.

In conclusion, the teachers who used digital storytelling in the classroom with their students reported that they observed increases in certain skills such as technical skills, presentation skills, research skills, organizational skills, and writing skills with their students. It is noted in the literature that when students actively participate in the creation process of digital storytelling, they most notably develop certain 21<sup>st</sup> century skills (Howell & Howell, 2003; Jakes, 2006; Robin, In press). Among these skills technical skills reportedly increased more than other skills in this study. This can be explained by the process of creating digital stories (See Appendix B). The last two steps of this process, "locating multimedia" and "creating the digital story," involve and require technical skills to be applied for the successful creation of a digital story. Naturally, regardless of the subject of the digital story, preparing the materials and

creating the story always take place, which allows students to increase their skills, whereas to see increases in other skills, purposeful attention needs to be given to the related step. For example, to see an increase in presentation skills, which is part of “sharing” step, the teachers need to make sure that they would allow and give a chance to their students to present their digital stories after the “creating the digital story” step. If this step is not followed by the teacher, consequently, an increase in presentation skills might not be expected from the student.

*Increase in Motivation and Engagement Level of the Students*

The second theme that emerged from the data as an impact was “an increase in motivation and engagement level of the students.” This result complied with the observed effects on student motivation and engagement as reported in the literature (Salpeter, 2005). In response to open-ended items, one teacher described the motivation and engagement level of her students with the following words: “The students were excited to use technology for the digital storytelling project, and they asked when we can do another project like this.” Another teacher pointed out that digital storytelling made students motivated and engaged: “I noticed that after showing the digital story, the students were very excited and wanted to create their own.”

All of the interviewees had something to say about their students’ increased motivation and engagement levels due to use of digital stories in the classroom. For example, Interviewee #2 said: “In creating stories for their oral presentations, they were able to go more in depth; they would like to have 10 or 20 slides, so they would do a little more research than just writing a paper” (R.Jarrell, personal interview, May 31, 2006). Interviewee #3 explains her situation in the classroom: “This was absolutely by far their

favorite project to do. It was an inspiration for most of them. They were so inspired to create a story. They got to tell a story about themselves” (N.Hayes, personal interview, May 31, 2006). Interviewee #1 also agreed that her digital storytelling project with her students “made them more excited even about coming to class.”

The researcher wanted to know what motivating factor in digital storytelling captured students’ attention and interest. Therefore, interviewees were asked what they thought about this issue. Interviewee #1 believed that the source of this interest was the “director’s chair” effect (Paull, 2002) and because it was also a form of self-expression for the students, allowing them to use their 21<sup>st</sup> century skills:

It [creating digital stories] is an expansion of their [students’] electronic skills and an educational avenue they didn’t explore before, so they get to have sound and image, writing and put it all together. It is like they are creating a new Hollywood (R. Moses, personal interview, May 31, 2006).

Interviewee #2 stated that it was mainly because students had to use motivating factors such as computers and technology when they created their projects:

They [students] are 21<sup>st</sup> century kids, so they like to do anything on the computer. I think it [use of digital storytelling] did motivate them, especially students who may not have been so motivated just to write typical research paper. It motivated them to a little higher degree, I believe (R. Jarrell, personal interview, May 31, 2006).

In conclusion, the findings from this study supported the idea of the “director’s chair effect.” One of the important aspects of digital storytelling is that the whole process of creating a digital story from scratch puts the author of the story in the “director’s chair” (Banaszewski, 2005; Paull, 2002). This gives students a chance for self-expression by creating their own movies. Studies have suggested personal narrative types of digital storytelling are especially effective in representing an individual’s voice, and they provide valuable opportunities for identity construction (Banaszewski, 2005). In addition,

the findings from this study, specifically, the observed increases in the motivation and engagement levels of the students who used digital storytelling were expected results as they were also reported in the literature (Salpeter, 2005).

### *Impacts on Special Groups of Students*

The third theme, which emerged from the data, was *impacts on special groups of students*. In response to an open-ended question item, one of the teachers who used digital storytelling made the following observation about the students: “Students felt more confident about their work.” Another teacher stated, in response to an open-ended question item, that digital stories can be used for targeted groups of students:

We have some students who are new to our school and to the USA. I would like to have them create a digital story that explains to others who come along in the future, the essential knowledge they must have to survive as a student. I also would like for them to share about their home country and culture with others through digital storytelling. I am also currently planning a project with an English teacher to have students complete a digital story to describe themselves through theme music for their lives.

Interviewee #2 also indicated that he saw benefits, especially with his “marginal students”:

I found it [digital storytelling] to be very helpful for the students that are marginal. This was a way to engage them, to allow them to be successful, to allow them to create a product that was visually pleasing and instructional for their peers, so it was able to really mainstream these students that are low performing students. They were very happy with their product. When they went home, they made sure their parents downloaded the program so that they could show their presentations (R. Jarrell, personal interview, May 31, 2006).

When he was asked who “marginal students” were, he explained:

By marginal students, I mean special education students; lower performing students, academically; students who may be operating barely in that grade level; students that are a result of inclusion; and learning disabled students. Maybe they couldn’t get up in front of the class with a paper they have written and orally present this paper, but they can get up in front of the class and, with a digital story going on, coming up to a computer through a digital projector and talking about that. So it is not like they are presenting a dry research paper, they are just talking about this subject they have done some studying about. It gives them a level of involvement that they might not have; it puts them more on a level with their peers (R. Jarrell, personal interview, May 31, 2006).

Questions about observed impacts on students also included whether or not the teacher had seen any “increase in the academic performance” of their students. According to one teacher, who responded to open-ended items in Survey 2, creating digital stories helped the students to better understand the content. As she taught, “several students said ‘wow’ and many understood one of the ideas mentioned in the story.” Interviewee #2 commented about the academic improvement as follows: “Students who may have less motivation about just writing a paper did see academic improvement because they actually enjoyed making these stories, manipulating the slides, adding music, voice over and text; they were more into it because it is more academic and creative” (R.Jarrell, personal interview, May 31, 2006).

In conclusion, the results from this study were compliant with the results mentioned in the literature. Teachers often observe the following effects with students when they use digital storytelling in the classrooms, especially with special education students and students with speech impairments: increased student motivation and engagement, increased creativity, and increased self-confidence (Salpeter, 2005). Creating digital stories is also reported as an empowering and transformative process for students since they express themselves through media (Weiss, 2002).

In summation of the observed impacts on students, even though teachers perceived that digital storytelling would help their students primarily with presentation skills, more teachers who actually used digital storytelling in the classroom selected “students’ technical skills increased” as a response than “their presentation skills increased.” Teachers also reported that there was an increase in students’ media literacy

skills. Overall, digital stories were reported to have positive effects on students' 21<sup>st</sup> century skills. These results were in line with what was found in the literature.

Another important effect observed by teachers was the increased motivation and engagement levels of their students. Teachers believed that creating digital stories increased their students' motivation and engagement levels. Results also suggest that the reason digital storytelling captures so many students' attention and makes them motivated is the "director's chair effect" (Paull, 2002) and being able to express themselves (Banaszewski, 2005). Positive impacts on special groups of students were one of the three main themes that emerged from the survey data. The survey results showed a pattern similar to what has been stated in the literature about the impacts of digital storytelling on special groups of students (Salpeter, 2005; Weiss, 2002).

### *Conclusions and Interpretations for Research Question 3*

Research Question 3, in simple terms, attempted to identify the barriers to using digital storytelling in the classroom.

According to the results of this study, "time issues" was the most reported barrier for not using digital stories in the classroom. Especially with so much emphasis on "testing," there would not be enough time for teachers to implement digital storytelling into their teaching. As one teacher puts it, "Time is always an issue with so much time spent on teaching children to constantly prepare for test," and another stated that "Texas Assessment of Knowledge and Skills (TAKS) preparation does not allow for much time away from the class." The results from Survey 2 also complied with Survey 1 where the

participants after the training indicated that “time issues” would be the biggest problem for implementing digital storytelling in the classroom.

The second most reported problem was “access to hardware”. (See Table 31) If “access to software” and “access to hardware” were combined under the broader category of “access to technology”, this new category would be the top ranked barrier.

Lacking time to explore new technology tools is considered one of the biggest barriers to the successful implementation of technology tools in the classroom (Rodriguez & Knuth, 2000). The ACOT study also concluded that if teachers have more time to explore a specific technology tool, they are more likely to use it and keep using it (Apple Inc., 1995). Survey 1 lays out a good description of what kind of technology access these teachers had before they implemented digital storytelling in the classroom. Even though it appeared that teachers had moderate to high levels of access to hardware and software resources, when it came to implementation of digital storytelling in practice, the reality of and unprepared or unsupportive school environment may play an important role (Sandholtz, 2001). Survey results indicated that teachers had the following problems in this area: software not approved by the district, not having the necessary software installed in the lab computers, and not having the necessary operating systems to run the software. “Our district has not approved the download of the software yet. We presented the program to them in August,” said one of the surveyed teachers in her response to the barriers that she faced. Past research indicates that there is a strong relationship between teachers’ access to technology and their rates of implementation (Martin, Kanaya & Crichton, 2004). The ACOT study also found that teachers who have access to software and hardware are more likely to integrate technology into their teaching than those who

do not have access to it (Apple Inc., 1995; Sandholtz, 2001). In addition, the results suggest that all of the teachers who did not use digital storytelling in the classroom still indicate that they would like to use digital storytelling in the classroom in the future.

In conclusion, “time issues” was reported as the biggest barrier by all of the teachers. Another major problem was “access to technology.” The results were in line with the problems noted in the literature review by users of educational technology tools in the classroom. Another interesting finding was that the teachers who didn’t use digital stories in the classroom still expressed their willingness to use them in the classroom. These results suggest that if the educators want teachers to successfully implement digital storytelling in the classroom, some basics needs must first be met, such as general administrative support or encouragement for this type of activities as well as more support from the school administration in terms of access to technology. After securing these basics, a general training on technology and specialized training on the digital story would be needed as a preponderance of literature indicates that more proficient users of technology are more likely to integrate technology in the classroom.

Teachers with a strong background in technology applications have more success with technology infusion (Krueger, Hanson & Smaldino, 2000). In addition, often teachers are provided technology tools but are given little instruction on how these tools can be used meaningfully in the classroom (Banaszewski, 2006). Teacher professional development programs that specifically concentrate on strategies for effective use of technology in instruction are considered very important for engaging students in appropriate technology-based learning experiences (Sivin-Kachala, 2000). Since digital

storytelling is a relatively new educational technology tool, more instruction on how to use digital storytelling in the classroom would be necessary for teachers.

As a next step, an on-going technical or curriculum support for teachers on how to use digital stories effectively in the classroom would dramatically increase the chance of digital storytelling usage in the classroom by teachers and students. “On-going process and continuing technical support,” emerged as one of the barriers reported by the teachers in this study, and plays an important role in teachers’ implementation of new technology tools into their instruction. The availability of quality technical and instructional support for teachers is considered a requirement for the successful integration of technology into the classroom (Bhatt, 2005; Ronnkvist, Dexter & Anderson, 2000). Research findings also confirm that teachers’ frequency, variety, and progressive use of technology are positively correlated with the availability of quality technology support (Dexter, Anderson & Ronnkvist, 2002). Administrative support, providing both proper “access to technology” and the necessary “training” with “continuing technical support” should also allow teachers to have enough time to explore digital storytelling and its uses in the classroom. Past research contends that teachers need adequate time to digest what they have learned and experiment after professional development programs. Acquiring new skills and becoming proficient at new ways of teaching requires additional time for planning, practicing skills, and trying out and reflecting on new ideas (Rodriguez & Knuth, 2000; Sandholtz, 2001).

Another complication suggested by the results includes not having enough time to practice digital storytelling in the classroom because of the time spent on the preparations for state assessments. In the current statewide assessment-driven educational system,

“time issues” in general would be one of the biggest challenges for teachers who have, unfortunately, very little control on the situation. Therefore, if teachers are to implement digital storytelling successfully, they should also be given enough time, after a proper training, to explore and practice the use of digital storytelling in the classroom

### *Summary of Conclusions and Implications*

Digital storytelling, one of the new technology applications used in the classroom by teachers, is recognized by educators for its immediate benefits. Certain benefits to students, such as developing 21<sup>st</sup> century skills, increasing student motivation and engagement, increasing creativity, respecting others’ backgrounds, facilitating discussions in the classroom, helping shy students willing to express themselves through stories, and increasing the self-confidence of special needs students are reported in the literature (Banaszewski, 2005; Howell & Howell, 2003; Hull & Nelson 2003; Jakes & Brennan, 2005; Salpeter, 2005; Robin, In press).

Digital storytelling is a relatively new strategy that utilizes multiple technology tools that can be used by teachers and students in K-12 education. This is one of the primary reasons why there is a limited amount of research that focuses on how digital storytelling is being used in the classroom. Most of these research studies rely on observations as they are anecdotal. More research implementing various methods is necessary to better understand the implementation of this tool in the classroom. The present study lays a foundation for future studies to investigate the incorporation of digital storytelling in K-12 classrooms. The study attempted to understand how a group of teachers used digital storytelling in the classroom after they were trained in a workshop at the University of Houston. The researcher took a case study approach using

both qualitative and quantitative data collection methods for the study because the case study approach fit best with the particular characteristics and challenges of this project. Given the conditions of the research study, an opportunity sample was used. Two surveys and three interviews were the backbone of the collected research data. The limitations of the research study were explained in the methodology chapter.

In conclusion, even though almost all of the teachers' perceptions about using digital stories in the classroom were very positive immediately after the workshops, in practice, more than half of the teachers in the follow up study didn't use digital storytelling during the implementation period at all. This was an unexpected result because teachers, for various reasons, did not use digital stories as much as they had predicted. The reasons behind not using digital stories in the classroom will be discussed with the barriers that teachers faced later in this section.

Although teachers in this study thought they would use digital stories primarily to teach content in the classroom and perhaps let their students create their own digital stories, in reality, digital stories were used as much by the students as by the teachers. This result suggests that despite the fact that digital storytelling is a powerful tool to convey desired messages around a topic or a subject area by the teachers; in practice it is also a very powerful tool that has positive impacts on students and their performances.

The teachers who used digital storytelling in the classroom with their students reported and all agreed that they observed increases in certain skills such as technical skills, presentation skills, research skills, organizational skills, and writing skills with their students. It is noted in the literature that when students actively participate in the creation process of digital storytelling, they most notably develop certain 21<sup>st</sup> century

skills (Howell & Howell, 2003; Jakes, 2006; Robin, In press). Among these skills, technical skills reportedly increased more than other skills. This can be explained by the process of creating digital stories. Teachers also reported that there was an increase in students' media literacy skills. Overall, digital stories were reported by teachers as having positive effects on students' 21<sup>st</sup> century skills.

Another important effect observed by teachers was increased motivation and engagement levels in their students. Teachers believed that creating digital stories increased their students' motivation and engagement levels. The findings from this study supported the idea of the "director's chair effect" as well as "being able to express themselves" and "simply being able to use computers" as to why digital storytelling effectively captivates and motivates students (Banaszewski, 2005; Paull, 2002).

Furthermore, the findings from this study, specifically the increase in students' motivation and engagement levels were expected results as they were also reported in the literature (Salpeter, 2005). Moreover, the positive impacts on special groups of students reported by the participants are consistent with literature regarding similar populations (Salpeter, 2005; Weiss, 2002). Finally, the results of the study also suggest that digital storytelling has a very broad range of application beyond the classroom such as collaborative cross-curriculum platforms.

In conclusion, "time issues" was reported as the biggest barrier by both the teachers surveyed after the training and teachers who used digital storytelling in the classroom. Another major problem was "access to technology." The results were in line with the problems faced by users of educational technology tools in the classroom as noted in the literature review. These results suggest that if the educators want teachers to

successfully implement digital storytelling in the classroom, basics needs, such as more support from the school administration in terms of access to technology and general administrative support or encouragement for these types of activities, must first be met. After securing these basics from the school administration to create the environment for the implementation of digital storytelling in the classroom, training on technology in general and digital storytelling specifically would be essential, as a preponderance of literature indicates that more proficient users of technology are more likely to integrate technology in the classroom. In addition to this fact, teacher professional development programs that specifically concentrate on strategies for effective use of technology in instruction are considered very important for engaging students in appropriate technology-based learning experiences (Sivin-Kachala, 2000).

Since digital storytelling is a relatively new educational technology tool, more instruction on how to use digital storytelling in the classroom would be necessary for teachers. On-going technical or curriculum support for teachers on how to use digital stories effectively in the classroom would dramatically increase the chance of its usage in the classroom by teachers and students. “On-going process and continuing technical support”, one of the barriers reported by the teachers in this study, plays an important role in teachers’ implementation of new technology tools into their instruction. The availability of quality technical and instructional support for teachers is considered a requirement for the successful integration of technology into the classroom (Bhatt, 2005; Ronnkvist, Dexter & Anderson, 2000). Support from the administration, both providing proper “access to technology” and the necessary “training” and “continuing technical support” should also include allowing teachers to have enough time to explore digital

storytelling and its uses in the classroom. Another aspect of the challenges with time includes not having enough time to practice digital storytelling in the classroom because of the time spent on the preparations for state assessments. In the current statewide assessment-driven educational system, “time issues” in general would be one of the biggest challenges for teachers, who have, unfortunately, very little control over this reality. Therefore, if teachers are to implement digital storytelling successfully, they should also be given enough time to explore and practice use of digital storytelling in the classroom after being properly trained.

#### *Other conclusions/considerations*

This section will briefly describe some of the results that were not originally anticipated but that emerged after the analysis of the research data. These considerations might be used for further research studies about digital storytelling.

Survey results indicated that digital storytelling might have an impact on teachers. Results indicated that digital storytelling changed the teaching style of some teachers. Interviewee #1 explained how digital storytelling had an effect on her teaching style:

For one thing it [digital storytelling] allowed me to incorporate more technology into the curriculum; for another thing, it enabled us to cover more material faster, and it certainly created greater excitement in the classroom rather than my lecturing or even my showing a PowerPoint presentation; this is something that they [students] had generated, so they took great ownership of the class (R.Moses, personal interview, May 31, 2006).

Interviewee #2 was also one of those teachers who believed that digital storytelling had changed his teaching style, which was “now more dynamic.” He elaborated on this effect as follows:

It [digital storytelling] is not just lecture or presenting the material. I think it added another dimension to my teaching style. When I would use ‘PhotoStory3’ to present

material myself, it just raised my teaching style to another level. Because it is much more versatile, exciting tool than just say "PowerPoint". I find it to be a great tool because it is easy to use (R.Jarrell, personal interview, May 31, 2006).

"Easy use of digital storytelling software" was one of the five themes revealed from the analysis of the open-ended item "What did you find most valuable about this workshop?" One of the teachers responded, "learning that making a digital story was not as complicated as it looked," and another teacher responded "the introduction of new online software that was easy to use and teach."

Interviewee #2 also thought teaching and creating digital stories using Photo Story 3 was very easy for him:

...What's so nice about it [creating digital stories] is that it is easy. You can be more precise, artistic and creative in your presentation because you don't have to worry about the technical part of it. I taught it [digital storytelling] to a group of teachers in 10 really fast minutes. They were like, "wow," it's fantastic. You don't have to teach it--you just have to introduce it (R.Jarrell, personal interview, May 31, 2006).

Another teacher also pointed out that what she liked most about creating digital stories was that it was easy to create them with the tools and resources available, such as Photo Story 3 and digital images. These results indicate that teachers find creating digital stories with Photo Story 3 software easy to learn and to teach; therefore, digital storytelling has the potential of spreading and being accepted in K-12 educational settings.

Interviews with Interviewee #2 also raised an important issue: standardized tests. When he was asked about whether digital storytelling could be used for preparations of standardized tests, he said, "For any subject, if you get them [students] excited about that, the more you get students engaged, they learn more. Digital storytelling is a definitive way to do that. They will do better on the standardized test." There is no research on the

relationship between digital storytelling and standardized tests. More research is definitely needed in this area.

K-12 students sometimes create “electronic encyclopedia entries.” Basically, they pick a topic, go to the encyclopedia or the web, and find a couple of paragraphs about a topic. Then they do an image search, find some pictures, narrate or read into the microphone what they found on the website or in the book, and use the pictures to illustrate it. This is usually not considered to be a good example of digital storytelling because it requires students merely to copy what other people have written. Interviewed teachers also pointed out that this problem occurred when their students created digital stories. One teacher indicated that she had to warn her students not to copy information from the web but instead to write their own script. Another interviewed teacher indicated that this was a common problem with the students in general since the students were not creative thinkers yet.

### *Future Potential of Digital Storytelling and Further Research*

Digital storytelling definitely has the potential to be a widely used educational teaching tool or strategy in K-12 education if it is used effectively in the classroom. Similar to other educational technology tools, the successful implementation of digital storytelling will depend on various factors, such as access to technology, proper training of the user, and on-going technical support.

One remarkable thing about using digital stories in the classroom is that teachers can really draw students’ attention and have them work on a subject easily. As the results of this study show, this phenomenon might be explained by the “director’s chair effect”,

the chance for self expression, and simply the opportunity to use computers in education (Banaszewski, 2005; Paull, 2002).

One problem that consistently hindered the researcher during the study was the lack of structured research on digital stories. The review of the existing literature, however, revealed a general consensus that digital storytelling received positive reviews from the educators. It was, therefore, immediately recognized for its potential. Future success and the persistence of digital storytelling will depend on more effective and broad research studies on various aspects of digital storytelling. The following section will list possible research topics for future researchers.

The following list is compiled as a reference for future research by the researcher in the hope that more studies will be conducted in this area.

1. What types of digital stories, “personal or/narrative stories,” “stories that inform or instruct,” or “stories that re-tell historical events,” have more potential to be used commonly in K-12 education? Does a certain type of digital story have a certain affect on students?
2. What are the effects of using digital storytelling on students in general?  
Specifically, on which group of students do digital stories have a greater affect?  
What are the effects of digital storytelling on at-risk students, special needs students or gifted and talented students?
3. What are the motivating factors of digital storytelling? Why does storytelling capture the interest of students and teachers? Are the motivating factors for digital storytelling the same or different than the factors for other multimedia driven educational tools?

4. What are the strategies for the effective use of digital storytelling by teachers? In what conditions would digital stories work best?
5. How can the problems faced during the implementation process of digital storytelling, such as access to hardware and lack of technical support, be overcome?
6. What is the effectiveness of digital stories as anticipatory sets?
7. How can digital stories be used outside of the classroom? What are the potential uses of digital storytelling for adults or higher education?
8. Does digital storytelling have an effect on teachers' teaching style?
9. How can the electronic encyclopedia entry effect be overcome by students who are creating digital stories?
10. What kind of training sessions or workshops works best for digital storytelling?
11. Can digital storytelling be used as a teaching tool for standardized tests such as TAKS? Does digital storytelling have an impact on TAKS scores in K-12 education? If yes, in what subject areas is it more effective? Is it more effective on writing/reading or social studies than on science or math?

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## APPENDIX A

### 21<sup>st</sup> Century Skills

## 21<sup>st</sup> Century Skills (EnGauge, 2003)

### *Digital Age Literacies*

#### *Basic Literacy*

Students demonstrate language proficiency (in English) and numeracy at levels necessary for success on the job and in a digital-age society.

#### *Scientific Literacy*

Students have the knowledge and understanding of scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity.

#### *Economic Literacy*

Can students identify economic issues; analyze incentives, examine the consequences of changes in economic conditions and public policies, collect and organize economic evidence, and weigh costs against benefits?

#### *Technological Literacy*

Do students know what technology is, how it works, what purposes it can serve, and how it can be used efficiently and effectively to achieve specific goals?

#### *Visual Literacy*

Can students interpret, use, appreciate, and create images and video using both conventional and 21st century media in ways that advance thinking, decision-making, communication, and learning?

*Information Literacy*

Are students able to evaluate information across a range of media; recognize when information is needed; locate, synthesize, and use it effectively; and accomplish this using technology, communication networks, and electronic resources?

*Multicultural Literacy*

Can students understand and appreciate similarities and differences between the customs, values, and beliefs of their own culture and the cultures of others?

*Global Awareness*

Do students recognize and understand relationships among international organizations, nation-states, public and private economic entities, socio-cultural groups, and individuals across the globe?

*Inventive Thinking**Adaptability/Managing Complexity*

Can students modify their thinking, attitudes, or behaviors to be better suited to current or future environments? Can they handle multiple goals, tasks, and inputs while understanding and adhering to organizational or technological constraints of time, resources, and systems?

*Self-Direction*

Are students able to set goals related to learning, plan for the achievement of those goals, independently manage time and effort, and independently assess the quality of learning and any products that result from the learning experience?

*Curiosity*

Do students have a desire to know or a spark of interest that leads to inquiry?

*Creativity*

Are students able to bring something into existence that is genuinely new and original, whether personally (original only to the individual) or culturally (where the work adds significantly to a domain of culture as recognized by experts)?

*Risk-taking*

Are students willing to make mistakes, advocate unconventional or unpopular positions, or tackle challenging problems without obvious solutions, such that their personal growth, integrity, or accomplishments are enhanced?

*Higher-Order Thinking and Sound Reasoning*

Are students adept at cognitive processes of analysis, comparison, inference/interpretation, evaluation, and synthesis, as applied to a range of academic domains and problem-solving contexts?

*Effective Communication**Teaming and Collaboration*

Can students cooperatively interact with one or more individuals, working with others to solve problems, create novel products, or learn and master content?

*Interpersonal Skills*

Are students able to read and manage their own and others' emotions, motivations, and behaviors during social interactions or in social-interactive contexts?

*Personal Responsibility*

Do students demonstrate a depth and currency of knowledge about legal and ethical issues related to technology, combined with an ability to apply this knowledge to

achieve balance, integrity, and quality of life as citizens, family and community members, learners, and workers?

*Social and Civic Responsibility*

Can students manage technology and govern its use in ways that promote the public good and protect society, the environment, and democratic ideals?

*Interactive Communication*

Do students generate meaning through exchanges using a range of contemporary tools, transmissions, and processes?

*High Productivity*

*Prioritizing, Planning, and Managing for Results*

Do students organize to efficiently achieve the goals of specific projects or problems?

*Effective Use of Real-World Tools*

Can students use real-world tools (i.e. the hardware, software, networking, and peripheral devices used by Information Technology (IT) workers to accomplish 21<sup>st</sup> century work) to communicate, collaborate, solve problems, and accomplish tasks?

*Ability to Produce Relevant, High-Quality Products*

Are students adept at developing intellectual, informational, or material products that serve authentic purposes and occur as a result of their using real-world tools to solve or communicate about real-world problems? These products include persuasive communications in any media (print, video, the Web, verbal presentation), synthesis of resources into more useable forms (databases, graphics, simulations), or refinement of questions that build upon what is known to advance one's own and others' understanding.

## APPENDIX B

### Process of Creating a Digital Story



### *Writing*

The first step in creating digital stories involves the writing process. This process starts with finding a topic for the story; then the author starts to write about the story. Having a central theme is important within this process. It usually takes the form of a narrative story based on an individual's personal experiences. Since good writing is very important for an effective story, multiple drafts of narratives are usually recommended before proceeding to the next step, developing scripts (Jakes & Brennan, 2005).

### *Developing Script*

A script is developed by the author after the completion of the narrative. Since the script constitutes the structure of the whole story, it only features the highlights of the narrative. While a narrative can be several pages, the script resulting from narrative may be around a page in length. A script also defines how the multimedia elements will be used in the story to ensure that they will contribute to the purpose of the story (Jakes & Brennan, 2005).

### *Storyboarding*

Storyboarding is the process of organizing the flow of the movie. A storyboard is “a series of rough sketches or diagrams that show a visual outline of a proposed story” (Robin, In press). Before locating multimedia, the author decides which visual would go with different parts of the script and in what order. Careful association of visuals in storyboarding before searching for them ensures that the author will have a quality product at the end. Even though this process is very essential in creating a good story, many students and teachers tend to skip it (Jakes & Brennan, 2005).

### *Locating Multimedia*

In this process, the author starts searching for multimedia such as pictures and audio clips. The search for visuals can be done by using online search tools, or a simple digital camera or scanner can be used to create the appropriate pictures related to the story. Audio clips can be found on the internet or can also be recorded by the author. One important concern about the use of multimedia is related to one of the elements of digital storytelling: economy. The overloading of still images can reduce the effectiveness of the digital stories (Lambert, 2003).

### *Creating Digital Story*

In this step, the author creates the story by using any available software, such as iMovie, Microsoft Photo Story, Windows Movie Maker, Pinnacle Studio or even Microsoft PowerPoint. All collected material is imported to the software, including the recorded narration. After all the elements of the story are carefully combined together, the final movie is created, which is also called “rendering.” Movies can be rendered in different formats based on how they are going to be distributed and shared later on (Jakes & Brennan, 2005).

### *Sharing*

Sharing and collaboration is the last and very crucial part of creating a digital storytelling process. After creating a digital story, it is generally shared by some audience, either through special sessions for showcasing or through the web (Weiss, 2002 & Saltpeter, 2005). Sharing is very important because it allows authors to evaluate their stories by getting feedback from an audience (Saltpeter, 2005; Robin, In press), and is

seen as an important “public” gathering and acknowledging each other’s work (Paull, 2002).

## APPENDIX C

### Human Research Approval

# U N I V E R S I T Y *of* H O U S T O N

Committee for the Protection of Human Subjects

316 E Cullen Building  
Houston, TX 77204-2015

713/743-9204  
Fax: 713/743-9227

July 19, 2005



Mr. Bulent Dogan  
c/o Dr. Bernard R. Robin  
Curriculum and Instruction

Dear Mr. Dogan:

Based upon your request for exempt status, an administrative review of your research proposal entitled "Teacher Perception of Digital Storytelling Workshop and Classroom Practice" was conducted on July 19, 2005, according to institutional guidelines.

This review has determined that your project is exempt under category 2.

As long as you continue this project using procedures described in this project, you do not have to reapply for review.\* Any modification of this approved protocol will require review and approval.

If you have any questions, please contact me at (713) 743-9215.

Sincerely yours,

Debra L. Comeaux, CIP  
Research Compliance Specialist  
Committees for the Protection of Human Subjects

\*Approvals for exempt protocols will be valid for 5 years beyond the approval date. At the end of that period, you will need to reapply to the Committee for approval if you wish to avoid an interruption of your data collection.

05276 (91857)



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## APPENDIX D

### Consent Letters

UNIVERSITY OF HOUSTON  
CONSENT TO PARTICIPATE IN RESEARCH

**PROJECT TITLE:** Teacher Perceptions of digital storytelling Workshop and Classroom Practice

You are being invited to participate in a research project conducted by Bulent Dogan, a graduate student in the Department of Curriculum and Instruction at the University of Houston. This project is part of the requirements for the completion of a doctorate degree under the direction of Dr. Bernard Robin.

**NON-PARTICIPATION STATEMENT**

Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. You may also refuse to answer any question.

**PURPOSE OF THE STUDY**

The purpose of this study is to learn about teachers' perceptions of digital storytelling training and classroom practices. The entire duration of the study is 1 year.

**PROCEDURES**

You will be one of approximately 75 teachers asked to participate in this study. All teachers registered for digital storytelling workshop are eligible to participate. This project will involve the completion of a questionnaire relating to your experiences in this workshop. The survey will consist of two parts. Completion of the first part will take approximately 10 minutes and will be administered before the workshop begins. The second part of the survey will take approximately 15 minutes and will be completed following the workshop. Within a 6-month period, you will be asked to fill out another survey in order to find out about your experiences with digital storytelling and your classroom practice.

**CONFIDENTIALITY**

Every effort will be made to maintain the confidentiality of your participation in this project. You will be asked to write your initials at the top of each page of both surveys. This will be used to link your responses to the first survey with the responses to the second survey. A list matching your initials to your name will be kept separate from the data and will be available only to the principal investigator and his faculty sponsor.

**RISKS/DISCOMFORTS**

There are no foreseeable risks to participation in this research study.

## **BENEFITS**

While you will not directly benefit from participation, your participation may help investigators better understand teacher perceptions of digital storytelling training and classroom practice.

## **ALTERNATIVES**

Participation in this project is voluntary and the only alternative to this project is non-participation.

## **PUBLICATION STATEMENT**

The results of this study may be published in professional and/or scientific journals. It may also be used for educational purposes or for professional presentations. However, no individual subject will be identified.

If you have any questions, you may contact Bulent Dogan at 281-451-3154 and bdogan@uh.edu. You may also contact Dr. Bernard Robin, faculty sponsor, at 713-743-4952.

ANY QUESTIONS REGARDING YOUR RIGHTS AS A RESEARCH SUBJECT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (713-743-9204). ALL RESEARCH PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT THE UNIVERSITY OF HOUSTON ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT.

I give my consent to participate in this study

Name \_\_\_\_\_

Signature \_\_\_\_\_

*We would like to follow up with you in 6 months to learn about your digital storytelling implementation and experiences. If you would like to be contacted, please provide your contact information below.*

Phone:

E-mail:

FOLLOW UP SURVEY  
COVER LETTER INFORMATION

**PROJECT TITLE:**

*Teacher Perceptions of digital storytelling Workshop and Classroom Practice*

You are being invited to participate in a research project conducted by Bulent Dogan, a graduate student in the Department of Curriculum and Instruction at the University of Houston. This project is part of the requirements for the completion of a doctorate degree under the direction of Dr. Bernard Robin.

You will be one of approximately 35 teachers asked to participate in this study. This survey will ask questions about your experiences with digital storytelling and your classroom practice after the summer workshop.

Every effort will be made to maintain the confidentiality of your participation in this project. You will be asked to write your initials in the beginning of the survey in order to match your responses with the first survey you completed in the workshop. A list matching your initials to your name will be kept separate from the data and will be available only to the principal investigator and his faculty sponsor.

If you have any questions, you may contact Bulent Dogan at 281-451-3154 and [bdogan@uh.edu](mailto:bdogan@uh.edu). You may also contact Dr. Bernard Robin, faculty sponsor, at 713-743-4952.

## APPENDIX E

### Survey Instrument 1

**PART I.****USE OF TECHNOLOGY****Section A: EXPERTISE**

*On a scale of 1 to 5 (1 = “Cannot Perform”), 5 = “Expert”, please rate your skill level for the following technology activities:*

|   | Cannot perform                                                                                                                             | Can perform with help | Can usually perform alone | Proficient (Can perform well) | Expert (Can teach others) |
|---|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------|-------------------------------|---------------------------|
|   | 1                                                                                                                                          | 2                     | 3                         | 4                             | 5                         |
| 1 | Use the main features of Microsoft Office in Word, PowerPoint, and Excel.                                                                  |                       |                           |                               | 1 2 3 4 5                 |
| 2 | Use internet search engines to find content-specific information.                                                                          |                       |                           |                               | 1 2 3 4 5                 |
| 3 | Design content specific Web pages/sites (e.g. using Front Page, Dreamweaver etc.).                                                         |                       |                           |                               | 1 2 3 4 5                 |
| 4 | Use digital imaging technology (e.g. digital camera, scanner and video camera).                                                            |                       |                           |                               | 1 2 3 4 5                 |
| 5 | Use basic features (e.g. resize, crop, adjust brightness) of image editing software (e.g. Photoshop, Image Ready, Microsoft Photo Editor). |                       |                           |                               | 1 2 3 4 5                 |
| 6 | Record audio on the computer.                                                                                                              |                       |                           |                               | 1 2 3 4 5                 |

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## USE OF TECHNOLOGY

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### Section B: ACCESS

*Please answer the following questions about your access to technology.*

I have access to a computer with \_\_\_\_\_ at the following locations: \_\_\_\_\_

**(Please check all that apply)**

- |                                            |                                  |
|--------------------------------------------|----------------------------------|
| <input type="radio"/> High Speed Internet  | <input type="radio"/> Home       |
|                                            | <input type="radio"/> School Lab |
|                                            | <input type="radio"/> Classroom  |
|                                            | <input type="radio"/> Office     |
| <br><input type="radio"/> Dial-up Internet | <br><input type="radio"/> Home   |
|                                            | <input type="radio"/> School Lab |
|                                            | <input type="radio"/> Classroom  |
|                                            | <input type="radio"/> Office     |
| <br><input type="radio"/> No Connection    | <br><input type="radio"/> Home   |
|                                            | <input type="radio"/> School Lab |
|                                            | <input type="radio"/> Classroom  |
|                                            | <input type="radio"/> Office     |

I am able to download and install free or shareware software in my \_\_\_\_\_ computer(s)?

**(Please check all that apply)**

- ☐ Home  
☐ School Lab  
☐ Classroom  
☐ Office

**Which of the following peripherals do you have access to in your HOME?**

- ☐ Digital Camera  
☐ Scanner  
☐ Video Camera  
☐ Computer Microphone  
☐ Other \_\_\_\_\_

**Which of the following peripherals do you have access to AT YOUR SCHOOL?**

- ☐ Digital Camera  
☐ Scanner  
☐ Video Camera  
☐ Computer Microphone  
☐ Other \_\_\_\_\_

**Is there a computer available for your professional use in your classroom/office?**

☐ Yes

☐ No

***If YES, How many?*** \_\_\_\_\_

**Please describe, computer labs in your school?**

**Number of labs:** \_\_\_\_\_

**Number of computers in labs:** \_\_\_\_\_

**Availability of labs to students:** \_\_\_\_\_

**Internet access:**

☐ Yes

☐ No

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### AWARENESS OF DIGITAL STORY TELLING

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**Were you familiar with “Digital Story Telling” before registering for the workshop?**

☐ Yes

☐ No

**What do you think “Digital Story Telling” is?**

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**How do you think you might use “Digital Story Telling”?**

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## THE WORKSHOP

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*Use the scale provided below, please indicate the degree to which you agree or disagree with each of the following items:*

|          | Strongly<br>Disagree                                                                 | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------|--------------------------------------------------------------------------------------|----------|---------|-------|-------------------|
|          | 1                                                                                    | 2        | 3       | 4     | 5                 |
| <b>1</b> | <b>Objectives of the workshop were clearly stated.</b>                               |          |         |       | 1 2 3 4 5         |
| <b>2</b> | <b>Workshop materials were appropriate to the subject matter.</b>                    |          |         |       | 1 2 3 4 5         |
| <b>3</b> | <b>The presenters clearly explained the process of creating a digital story.</b>     |          |         |       | 1 2 3 4 5         |
| <b>4</b> | <b>The presenters adequately addressed issues related to my instructional needs.</b> |          |         |       | 1 2 3 4 5         |
| <b>5</b> | <b>The length of the training was appropriate.</b>                                   |          |         |       | 1 2 3 4 5         |
| <b>6</b> | <b>I feel prepared now to integrate digital storytelling into my teaching.</b>       |          |         |       | 1 2 3 4 5         |

**I would be interested in additional training in following areas: ( Check all that apply )**

- ☐ Digital Photography
- ☐ Video recording
- ☐ Audio recording
- ☐ Script writing
- ☐ Curriculum Integration
- ☐ Other \_\_\_\_\_

**ADDITIONAL COMMENTS:**

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## FUTURE USE AND IMPLEMENTATION

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**How might you use digital storytelling (DS)? (Check all that apply)**

- ☐ Create *my own* Digital Stories to teach content
- ☐ Use Digital Stories created by *others* to teach students content
- ☐ Use Digital Stories created by *self and others* to teach students content
- ☐ Have students create their own DS to learn content
- ☐ Other \_\_\_\_\_
- ☐ No plans at this point to use DS

**I want my students to learn to create their own Digital Stories to improve their \_\_\_\_\_ (Check all that apply)**

- ☐ Research skills
- ☐ Organizational skills
- ☐ Writing skills
- ☐ Technical skills
- ☐ Presentation skills
- ☐ Other \_\_\_\_\_
- ☐ No plans at this point for students to create their own digital stories

**What are perceived barriers of implementation of DS as you intend to use it?**

**(Check all that apply)**

- ☐ Access to hardware
- ☐ Access to software
- ☐ Technical assistance
- ☐ Time issues
- ☐ Other \_\_\_\_\_
- ☐ No plans at this point to use DS

**Where would you teach Digital Stories to your students?  
(Check all that apply)**

- ☐ School Lab
- ☐ Classroom
- ☐ N/A
- ☐ Other \_\_\_\_\_

**Where would you want your students to create Digital Stories?  
(Check all that apply)**

- ☐ Home
- ☐ School Lab
- ☐ Classroom
- ☐ N/A
- ☐ Other \_\_\_\_\_

**Additional Comments:** \_\_\_\_\_

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## BACKGROUND INFORMATION

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**Answer each question by darkening the circle of your choice.**

**Gender:**

- ☐ Male  
☐ Female

**Age:**

- ☐ 20-25  
☐ 26-30  
☐ 31-35  
☐ 36-40  
☐ 41-45  
☐ 46-50  
☐ 51-55  
☐ 56-60  
☐ 61-65  
☐ 66 and over

**Race:**

- ☐ White  
☐ Hispanic  
☐ African-American  
☐ Asian-American  
☐ Other \_\_\_\_\_

**I am a...**

- ☐ K-12 Teacher  
☐ Technology Specialist  
☐ Faculty  
☐ Staff  
☐ Graduate Student  
☐ Student Teacher  
☐ Other \_\_\_\_\_

**How long have you been teaching?**

- ☐ This is my first year.  
☐ 2-3 years  
☐ 4-7 years  
☐ 8-12 years  
☐ 13-20 years  
☐ 21-29 years  
☐ 30+ years

**What grade(s) are you teaching? (Check all that apply)**

- ☐ PK   ☐ K   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11   ☐ 12

**What subject(s) do you teach? (Check all that apply)**

- |                                             |                                                       |
|---------------------------------------------|-------------------------------------------------------|
| <input type="radio"/> Agriculture           | <input type="radio"/> Industrial/Technology Education |
| <input type="radio"/> Art                   | <input type="radio"/> Language(s) other than English  |
| <input type="radio"/> Biological Sciences   | <input type="radio"/> Mathematics                     |
| <input type="radio"/> Business              | <input type="radio"/> Music/Performing Arts           |
| <input type="radio"/> Chemistry             | <input type="radio"/> Physical Education              |
| <input type="radio"/> English/Language Arts | <input type="radio"/> Physics                         |
| <input type="radio"/> Health Science        | <input type="radio"/> Social Science                  |
| <input type="radio"/> Home Economics        | <input type="radio"/> Other _____                     |
| <input type="radio"/> Geosciences           |                                                       |

**GENERAL COMMENTS**

(In this section, please provide us more feedback about your experience with the workshop.)



## APPENDIX F

### Survey Instrument 2

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### USE OF DIGITAL STORYTELLING

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If you have not used Digital Stories at all, please skip to question VIIIa.

**I. Please, state *how* and *in what frequency* you used digital stories  
IN THE CLASSROOM:**

**1. I created *my own* digital stories to teach content:**

- ☐ ☐ Once in the past semester
- ☐ ☐ 2-4 times in the past semester
- ☐ ☐ More than 4 times in the past semester
- ☐ ☐ I did not use digital stories in the classroom

**2. I used digital stories created by *others* to teach students content:**

- ☐ ☐ Once in the past semester
- ☐ ☐ 2-4 times in the past semester
- ☐ ☐ More than 4 in the past semester
- ☐ ☐ I did not use digital stories in the classroom

**3. I used digital stories created by *self and others* to teach students content:**

- ☐ ☐ Once in the past semester
- ☐ ☐ 2-4 times in the past semester
- ☐ ☐ More than 4 in the past semester
- ☐ ☐ I did not use digital stories in the classroom

☐

**4. I had students create their own digital stories to learn content:**

- ☐ ☐ Once in the past semester
- ☐ ☐ 2-4 times in the past semester
- ☐ ☐ More than 4 in the past semester
- ☐ ☐ I did not use digital stories in the classroom

Other \_\_\_\_\_

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**OPEN ENDED ITEM:** Please give an example of how you or your students used digital stories in the classroom:

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**II. Please, state how you have used digital storytelling *OUTSIDE OF THE CLASSROOM*:**

- ☐ I taught digital storytelling to faculty members in my school
- ☐ I taught digital storytelling to family members
- ☐ I did not use digital stories outside of the classroom
- ☐ Other \_\_\_\_\_

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**III. If you have used digital stories in the classroom, please indicate the benefits you have observed with your students. If not, please skip to BARRIRES.**

*Use the scale provided below, please indicate the degree to which you agree or disagree with each of the following items:*

| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|
| 1                    | 2        | 3       | 4     | 5                 |

|   |                                                   |   |   |   |   |   |
|---|---------------------------------------------------|---|---|---|---|---|
| 1 | My students increased their research skills       | 1 | 2 | 3 | 4 | 5 |
| 2 | My students increased their organizational skills | 1 | 2 | 3 | 4 | 5 |
| 3 | My students increased their writing skills        | 1 | 2 | 3 | 4 | 5 |
| 4 | My students increased their technical skills      | 1 | 2 | 3 | 4 | 5 |
| 5 | My students increased their presentation skills   | 1 | 2 | 3 | 4 | 5 |
| 7 | My students engaged more in the subject taught    | 1 | 2 | 3 | 4 | 5 |
| 8 | My students performed better academically         | 1 | 2 | 3 | 4 | 5 |

**OTHER BENEFITS:** Please give examples of **effects** you observed with your students after using digital stories in the classroom:

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**IV. Where did you teach digital stories to your students? (Choose all that apply.)**

☐ School Lab

- ☐ Classroom
- ☐ N/A
- ☐ Other \_\_\_\_\_

**V. Where did your students create digital stories? (Choose all that apply.)**

- ☐ School Lab
- ☐ Classroom
- ☐ N/A
- ☐ Other \_\_\_\_\_

**VI. Has digital storytelling changed your teaching style?**

- ☐ Yes
- ☐ No

If yes, please briefly describe how:

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**VII. What type of digital stories have you used? (Choose all that apply.)**

- ☐ Personal or Narrative stories
- ☐ Stories that inform or instruct
- ☐ Stories that re-tell historical events
- ☐ Other \_\_\_\_\_

**VIII. If you have not used digital stories in the classroom BUT plan to use later, PLEASE CHECK ALL THAT APPLY:**

- ☐ No plans at this point to use digital storytelling in the future
- ☐ I plan to create *my own* digital stories to teach content
- ☐ I plan to use digital stories created by *others* to teach students content
- ☐ I plan to use digital stories created by *self and others* to teach students content
- ☐ I plan to have students create their own digital stories to learn content
- ☐ Other \_\_\_\_\_

**OPEN ENDED ITEM:** Please give an example of how you or your students might use digital stories in the classroom:

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**BARRIERS**

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**What were the barriers that keep you from using digital stories in the classroom?  
(Complete all that apply)**

☐ I faced no barriers.

☐ Access to hardware

If yes, what kind of problems have you had?

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☐ Access to software

If yes, what kind of problems have you had?

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☐ Lack of technical assistance or support

If yes, what kind of problems have you had?

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☐ Time issues

If yes, what kind of problems have you had?

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☐ Other \_\_\_\_\_

**OPEN ENDED ITEM:** Could you please elaborate on the barriers you encountered in using digital stories?

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### WORKSHOP ASSESSMENT

*Use the scale provided below, please indicate the degree to which you agree or disagree with each of the following items:*

| Strongly<br>Disagree | Disagree | Neutral | Agree | Strongly<br>Agree |
|----------------------|----------|---------|-------|-------------------|
| 1                    | 2        | 3       | 4     | 5                 |

|   |                                                                                                          |   |   |   |   |   |
|---|----------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 1 | After the workshop, I felt well prepared to use digital stories in the classroom.                        | 1 | 2 | 3 | 4 | 5 |
| 2 | I was able to find answers to my questions using the “Educational uses of digital storytelling” website. | 1 | 2 | 3 | 4 | 5 |
| 3 | I would benefit from another workshop.                                                                   | 1 | 2 | 3 | 4 | 5 |

**I would like to get additional help (please check all that apply)**

- ☐ By Email contact
- ☐ By personal contact
- ☐ By attending a help session at UH
- ☐ By attending Help session in my school
- ☐ By attending another workshop
- ☐ I do not wish to get additional help.

**Have you participated in any kind of follow up after the workshop?**

- ☐ Yes
- ☐ No

**If yes, could you please describe?**

- ☐ What kind of follow up was involved?
- ☐ Who was involved?
- ☐ How much time did you devote to this follow up?
- ☐ When was it?

**Answer each question by darkening the circle of your choice.**

**Gender:**

- ☐ Male  
☐ Female

**Age:**

- ☐ 20-25  
☐ 26-30  
☐ 31-35  
☐ 36-40  
☐ 41-45  
☐ 46-50  
☐ 51-55  
☐ 56-60  
☐ 61-65  
☐ 66 and over

**Race:**

- ☐ White  
☐ Hispanic  
☐ African-American  
☐ Asian-American  
☐ Other \_\_\_\_\_

**I am a... (Select all that apply)**

- ☐ K-12 Teacher  
☐ Technology Specialist  
☐ University Faculty  
☐ Staff  
☐ Graduate Student  
☐ Student Teacher  
☐ Other \_\_\_\_\_

**How long have you been teaching?**

- ☐ This is my first year.  
☐ 2-3 years  
☐ 4-7 years  
☐ 8-12 years  
☐ 13-20 years  
☐ 21-29 years  
☐ 30+ years

**What grade(s) are you teaching? (Check all that apply)**

- ☐ PK   ☐ K   ☐ 1   ☐ 2   ☐ 3   ☐ 4   ☐ 5   ☐ 6   ☐ 7   ☐ 8   ☐ 9   ☐ 10   ☐ 11   ☐ 12

**What subject(s) do you teach? (Check all that apply)**

- |                                             |                                                       |
|---------------------------------------------|-------------------------------------------------------|
| <input type="radio"/> Agriculture           | <input type="radio"/> Industrial/Technology Education |
| <input type="radio"/> Art                   | <input type="radio"/> Language(s) other than English  |
| <input type="radio"/> Biological Sciences   | <input type="radio"/> Mathematics                     |
| <input type="radio"/> Business              | <input type="radio"/> Music/Performing Arts           |
| <input type="radio"/> Chemistry             | <input type="radio"/> Physical Education              |
| <input type="radio"/> English/Language Arts | <input type="radio"/> Physics                         |
| <input type="radio"/> Health Science        | <input type="radio"/> Social Science                  |
| <input type="radio"/> Home Economics        | <input type="radio"/> Other _____                     |
| <input type="radio"/> Geosciences           |                                                       |

## APPENDIX G

### Contact Letter

# U N I V E R S I T Y *of* H O U S T O N

College of Education  
Department of Curriculum and Instruction

256 Farish Hall  
Houston, TX 77204-5027

713/743-4950



October 14, 2005

Dear Digital Storytelling Workshop Participant,

We enjoyed meeting you during our summer workshop at the University of Houston and hope the information you learned has been of use to you in your teaching this semester. We tried to email you this letter, but we were unsuccessful in reaching you. There are a few new happenings with our Digital Storytelling initiative, and we would like to share this information with you. First, we have a new website layout. You can access the website through the same address <http://www.coe.uh.edu/digitalstorytelling>. Included in this new layout are *more training materials* and *new story examples*. We have organized them by subject/content areas. You might even find your story on the site! If you or your students have created more stories, we hope you might share them with us. We are continuing to add material to the site as well as adding more digital stories so please check back often.

We also want to remind you that we are available to assist you in your endeavors to use Digital Storytelling. We are available to schedule after school time or even a follow up on a Saturday in our computer lab at UH. Because we know that your schedule is extremely busy we may also be able to plan a visit to your school for this help. Please contact us if you need any assistance as we would love to continue working with you.

In summary, there are two things we would like to receive from you.

- 1) A confirmation by email that you received this letter.
- 2) Also, please let us know whether or not you would like additional assistance with digital storytelling.

We hope you are off to a good year and hope to hear from you soon!

Sincerely,

Dr. Bernard Robin  
[brobin@uh.edu](mailto:brobin@uh.edu)  
Office Phone: 713-743-4952

Anne Rudnicki  
[arudnicki@mail.coe.uh.edu](mailto:arudnicki@mail.coe.uh.edu)

Alysa Cozart  
[acozart@mail.coe.uh.edu](mailto:acozart@mail.coe.uh.edu)



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## APPENDIX H

Tables, Table 15

Table 15a

*Number of Computer Labs Available in the School*

| Number of Computer Labs | Frequency | Percent |
|-------------------------|-----------|---------|
| 0                       | 3         | 9.7%    |
| 1                       | 8         | 25.8%   |
| 2                       | 8         | 25.8%   |
| 3                       | 4         | 12.9%   |
| 4                       | 4         | 12.9%   |
| 6-10                    | 1         | 3.2%    |
| Don't Know              | 2         | 6.5%    |
| Missing                 | 1         | 3.2%    |
| Total                   | 31        | 100%    |

Table 15b

*Number of Computers Available in Each Lab*

| Number of Computer Labs | Frequency | Percent |
|-------------------------|-----------|---------|
| 10-20                   | 22.6      | 9.7%    |
| 21-30                   | 41.9      | 25.8%   |
| 31-40                   | 22.6      | 25.8%   |
| 41 or above             | 12.9      | 12.9%   |
| Total                   | 31        | 100%    |

APPENDIX I  
INTERVIEWS

## INTERVIEW WITH INTERVIEWEE #1, 5/31/2006

**How have you used digital storytelling in a classroom?**

Well, in a number of ways. First of all the University of Houston conducted a workshop for my students in my class so that they knew about the technique, which they didn't know at all. And they could produce a sample right there after working in the lab for a day. And so with that introduction into the technology they were able to research historical topics. And some of the samples that the University of Houston had did pertain to history, but they learned other techniques. They learned other avenues for exploration including political science, geography. And so it became a means for us to research broad areas and limited it to specific persons, events, dates. And they made presentations to the class and was able to give them those capsule views in all the moments in history.

**So basically your students created digital stories too, right?**

Well, absolutely.

**When you work with your students using digital stories have you seen any kind of affect on the students? Or have you observed any changes in your students in terms of their technical skills, maybe writing skills, research skills, that sort of impact?**

Well, their technical skills certainly improved magnificently, but it also generated greater interest in history or in political science. They were able to research and many times could select their own topics with my approval and so it generated a whole more interest in history and in conducting historical research.

**Do you think that had any affect on their academic performance?**

Oh, absolutely. It made them more excited even about coming to class.

**And do you think that interest maybe carried over to other subjects? Did they bring up other things that they were learning in other courses that they might have been able to bring into the digital story telling process?**

I don't think that they used the process in other classes, but I certainly know that their instructors were aware. And at my school at faculty meetings, I would sometimes show a presentation done by one of the students, kind of that cross curriculum type of exchange.

**What about their presentation skills and speaking in front of an audience or organizing their thoughts and creating logical question and answers and introductions and conclusions, that kind of thing?**

They became very poised, very confident in making presentations standing before a class; and starting, "this is the beginning", and "here is the end", and "do you have any questions", and being able to respond to those questions. But they became much more sophisticated.

**Did digital storytelling in any way change your teaching style?**

I think it did. For one thing it allowed me to incorporate more technology into the curriculum. For another thing it enabled us to cover more material faster and it certainly created greater excitement in the classroom. Rather than my lecturing or even my showing a power point presentation, this was something that they had generated. So they took great ownership of the class.

**In digital story telling there are three types of digital stories, stories that instruct or inform, stories that retell historical events, and personal stories. Which one of these did you use most and is there any specific reason for that?**

I think we mostly focused on periods of time or events. Two of my students from last year won history fair awards for their digital story telling. And one of them focused on Nat Turner and the other focus was on the Nuremberg trials. Now the Nuremberg trials actually went to state level. He didn't win at state, but he did get to go to state. That was a big, big honor.

**In your digital story telling process in the classroom did you face any barriers, any kind of difficulties in terms of hardware, software or technical help, or any kind of**

**time issues? Did you have any difficulties, any barriers in the implementation of the digital storytelling in the classroom?**

Our difficult part was that we had no computers in the classroom.

**So you had to use a lab then?**

Basically everything was homework and when they did come to class, of course, they used my teacher laptop to project and show things. But we didn't have much opportunity to perfect things, presentations, because we didn't have computers in the classroom.

**Basically they completed their stories at home?**

Right, and then they'd have to go home that day and make any corrections or revisions or add something new or whatever. But it was basically at home that they did all the technical work.

**You participated in our workshop. As far as you can remember how did you find the organization of the workshop? Did you think the length of the workshop was good enough for you?**

Oh, yeah. I thought it was quite good as a matter of fact. We were able to receive instruction and apply it. We had a media help there and it was produced a product.

**I realized from your survey responses, your technical skills. Do you think your technical skills improved due to creating digital skills in the classroom? Do you think there is any kind of increase in your technical skills?**

As a teacher? Oh, absolutely. They absolutely improved.

**Can you give us some specifics about that? How did they improve?**

Well, I could create, I'll just describe it as an unsophisticated digital story, and when it came time to add the nuances, different music and fade in and fade out, one of the graduate students helped me with that, on a Saturday as a matter of fact.

**One last question, is there anything else that you think is noteworthy that you'd like to share with us that we haven't specifically asked about?**

Well, what I thought was good was my being able to bring... I brought two classes, two different years, to your lab. And I found that kind of intense instruction very, very helpful and they were very interested and they stayed attentive the whole time. And then at a later time, *Anne*, the graduate student, actually came out to school to that same class and went over some of the finer points with them. And so, I thought that follow up was very good.

**I have one more last question. You told us that your students were very interested in the subject area when they created digital stories. What aspect of the digital stories motivates kids? Do you have any idea on that? Why it captures their interest? Do you have any idea on that?**

Well for one, I think that it's an expansion of their electronic skills and an educational avenue that they haven't explored before. And so they get to add sound and image, writing and put it all together. It's like they're creating the new Hollywood.

**And they're writing skills, I'm sure you've observed some changes in their writing skills. Did it motivate them to write more stuff?**

To write more and I had to caution them about, that they couldn't just cut and paste. That they actually had to summarize or something of that nature, that they just couldn't cut and paste.

**One of the things that some of colleagues that are looking at digital storytelling with students have commented on is that sometimes students do what they call an electronic encyclopedia entry. So, they'll go to an encyclopedia and find a paragraph about the Nuremberg trials, for example, and then they'll do an internet photo search and find four or five pictures of it. Then they'll just read into a microphone what the encyclopedia said, illustrating it with the pictures they found. And although it is good practice for the students to be able to do something like that, it doesn't really get to the process of conducting research and writing your own**

**comments and formulating your own story with your own point of view. I was wondering if you had observed that phenomenon and if so how you dealt with it or if you hadn't whether you think it's a legitimate concern.**

Well, I think it is a legitimate concern especially from an academic standpoint because we're not fostering plagiarism. And we are trying to teach them to write in their own words, paraphrase, conduct research and come up with some ideas on their own instead of what I call cut and pasting. And I think that's a level to which teachers and students should aspire.

**I agree with you. Did you observe that, though, in your work with your students?**

After I wouldn't accept some of the other simpler versions, yes, then they got down to business.

## INTERVIEW WITH INTERVIEWEE #2, 5/31/2006

**Can you describe for us how did you use digital story telling in the classroom?**

Well, I teach fifth grade, all subjects and we're a project based school. And so everything we do, every project that we engage in, every activity results in an oral presentation by the students. I do this mainly because this forces them to consider the material from a higher order of the thought processes so that they can then become the teachers as it were. So they found that *Photostory 3* was a much better presentation instrument then PowerPoint. So they used it in conjunction with their oral presentations of their subject matter, be it science or history or even creative writing.

**Did you create digital stories for your students?**

Sometimes, but the majority of the incorporation of digital story telling in this classroom was the students themselves creating the work. We're a constructivist school, so they did all the work.

**What kinds of stories did they create? Were they personal stories? Were they about any subject area?**

Subject areas, yes. Typically it was a culmination of research projects in history and science.

**Did you observe any effect on the students when they created digital stories?**

Well, in creating this story in preparation for oral presentation, what I found was that they were able to go more in depth. They liked to have 10 or 20 slides. So they would do a little more research than if they were just writing a paper.

**Can you tell us specifically if you had observed any increase in their writing skills, research skills, and technical skills?**

I think so because they knew that they weren't just writing a research paper and turning it into me. They were going to be presenting this material to me and to their peers and oftentimes to the greater school community and their parents. We do a world bazaar where each classroom either picks a country or an area. We did this year for the world

bazaar, we did South America. And the students created digital stories about the country they were researching on the continent of South America. Then we had a school wide sort of bazaar where they would set up their laptops out in the common area and then people came by and put the headphones on and watched their digital story about the country.

**Have you seen any changes on motivation and the engagement levels of the students when they use digital stories?**

Yes because they are 21<sup>st</sup> century kids and they like to do anything on the computer. In our classroom every student has their own laptop assigned to them. And anything they can do on the computer, they like that. And so I think it did motivate. Especially the students who may not have been so motivated just to write a typical research paper. It motivated them to a higher degree, I believe.

**Do you think your students performed better academically due to the use of digital stories?**

Well, again, I think that the students that may have been less than motivated about just writing a paper did see academic improvement because they actually enjoyed making these stories and manipulating the slides and adding the music and voice over and text. So it became that they were more “into” it because it seemed less academic and more creative.

**In one of your survey responses about the teaching style, you said “my style is now more dynamic”. Could you please elaborate on this comment?**

Then it’s not just lecture or not just presenting the material. It’s more like incorporating .... I think it added another dimension to my teaching style. When I would use Photostory 3 to present material myself, it just raised it to another level. Because it is a much more versatile, exciting tool than just PowerPoint. Now PowerPoint is giving competition with its new presentation edition. But I find it to be a great tool because it is easy to use. Even though we did experience difficulty burning them onto a DVD, as far

as using it and putting it on a flash drive and presenting it, there was no problem whatsoever. We could teach second graders to do that.

**You talked about you had a problem burning DVDs, but other than that did you have any barriers, difficulties?**

As far using the software, none whatsoever.

**Software, access to hardware, technical help, time issues?**

Nope, none whatsoever. They took to that like ducks to water.

**One of my colleagues or a couple of my colleagues who've been working with digital story telling have talked about how, especially with K-12 students, how sometimes they create what these authors are terming electronic encyclopedia entries. So basically they pick a topic and they go to the encyclopedia or the web and they find a couple of paragraphs about a topic. And they do an image search and they find some pictures and then they just narrate or read into the microphone what they found on the website or in the book and use the pictures to illustrate it. And so they say that this is maybe good practice for students, but not necessarily a good example of using digital story telling because it's basically just having them write what other people have written. I wondered if you have either encountered any of that or whether you specifically talk to your students about not doing that, if you could just comment on that.**

Sure, of course. And that's irregardless of whether if you've got a 10 year old doing a research paper or researching topic, that's what they do. They're not creative thinkers at this point, most of them. If I said the majority of them, that's what they do. Let me slow down. We're a constructivist school so we give them the big global picture and let them find areas that they're interested in within that big idea, say westward expansion in the mid 1800s. So I'm not giving them a specific topic. I'm giving them this global idea of westward expansion. So that's what they do. I find a lot of times in your children that are average academically. That's what they do, they go find me a couple of facts and they present those facts. It's one of the reasons that PowerPoint, especially in elementary

education, is getting kind of a bum rap. Because you find a PowerPoint presentation that was just paragraphs or sentences or dry, raw facts translated from a text book or encyclopedia, put up on your screen and the kid would turn his back to the audience and read the slide. You've lost the whole idea of using an overhead to help you to present your material. It was the material and oftentimes you had to get with students and have them back off because the presentation was running the research as opposed to the other way around.

**But do you think that Photostory gives you an extra advantage in helping students become creative and to organize their own thoughts and their own perspective?**

Yes, I do and also because it's more about the digital image than the text. Whereas with PowerPoint it's more about the text than the digital image. It lends itself to being an accessory to the presentation than being the presentation itself. And so I found it to be definitely a step up from PowerPoint due to that fact because it wasn't so much the text as it was the picture. And so the picture gave you a good visual, it didn't provide you with data and raw facts. They would have to orally present that. They weren't just reading it with their back to the class from a PowerPoint presentation. To close that, let me tell you that yes, with a lot of students you have to say back off from that presentation. That's not your research. That's just a way to help present it with graphic images. And they like the whole movement, the whole "Ken Burns Effect" idea. And even though, I will say we put the "Ken Burns" on transitions because transitions are a monster of their own.

**Let me ask about the digital images specifically. Was it mostly images found on the internet or did you use any digital cameras to have students take their own pictures?**

We use digital cameras; we use images that they found off the internet. Even though, especially at this age group we're very cautious about typing in a word on Google image search. Because that is almost guaranteed to get something they probably shouldn't look at. And also they would create things, then scan them and use them themselves. Between digital cameras and internet searches....

**I am curious about the scanned images. Would they scan things out of books? You said that they created things?**

They scanned things that they had created themselves and then using those. Whereas, you lose a little quality with the scanning into digital, but these are like maps, hand-drawn maps or images that they've drawn. Some of my students are extremely artistic and creative and feel more comfortable creating their own image. Some of them wouldn't do that on a bet. I guarantee every image on there came from Google. But come to find out you need to pay attention. That was a big good lesson that we had about looking at the pixel sizes of those images before you download them because when you shoot up on the screen. When it was 156 by 96 bit image it didn't come up very clear at all on the screen. So, we got a lot of technology application instruction out of using Photostory 3. Anybody I have showed it to, since I have gone to your session, everybody that I've showed it to, teachers and students, they just love it. They absolutely just love it. And a lot of people are using it. It's a great program. It's a good usable working tool. What's so nice about it is that it's easy. And so you can be more precise and artistic in your presentation and creative because you don't have to worry about the technical part of it, getting it to do what you want it to do. It is relatively easy. I taught it to a group of teachers in 10 really fast minutes. They were like "wow, this is really fantastic". You really don't have to teach it, you just have to introduce it.

**We've found the exact same thing, which is why we like it so much. In your last comment on the survey, you said, "my students greatly benefited by being taught with this software". Do you have anything you want to add anything on this?**

The only thing I found it to be very helpful for the students that are marginal, that are buying this whole educational experience at a very marginal level. I found this was a way to engage them, to allow them to be successful, to allow them to create a product that was visually pleasing and instructional for their peers. So it was able to really mainstream these guys that are my low performing or marginal students. And that was really great. You love to see that. And they were very happy, very please with their product. They made sure that when they went home that their mom had downloaded that Photostory 3, so they could show it to their mom. And we did digital portfolios. And I

know that every student (I had 20 students) and every one of them had at least 3 Photostories on their CD, which was their digital portfolio they took with them when they left the school. That was probably the greatest success factor of it. It allowed everybody to have a nice presentation that they can show off and be real proud of.

**Did you get any comments from parents?**

Yeah, they were ... they thought it was interesting because they don't know about this program. They thought wow, if you look at it and especially if a child or anybody has spent any amount of time on it, you look at them and wow, you're just blown away by it. It was like wow that's so cool the way you do that. And you don't have to tell them how easy it was. They came back and said, "That was really cool. My child came home and showed me that and I was really impressed." I found that with the kids when we were doing the South America project it generated more interest than if they were just getting stuff from the encyclopedia or from the text book because they were able to see the country that they were studying and get more involved with it.

**Do you think that there was any spillover into other classes that your students were taking? Did you hear them talk about how they could use them in a science classroom or math?**

Well, the thing is I teach all subjects, so I'm their teacher. But yeah, they did use it in science. We didn't really have to use it in any math applications, but we could have. We used investigations. We could have done it. We just didn't. Something I need to think about for next year I think. Next year I'm going to do it a lot more in science because we're really going to focus on earth science next year. We didn't do so well on TAKS testing earth science component. So we'll do a lot more of that. We're going to use it this summer. I teach a summer technology camp and we'll be using it to present in some video conferencing, actually.

**You mentioned TAKS tests. I know that probably at your constructivist school the philosophy is that it's more important for kids to learn than to prepare them endlessly with drill and practice for the test, but the test is still important. Do you**

**think that, this is the heart of what we're trying to figure out? We haven't really figured out a good way yet to look at it, but I'm curious to know what your thoughts would be about whether students who learned to make stories and engage in the content and get excited and motivated, whether you think that has a positive effect on how they will perform on the standardized test?**

Absolutely, there is no doubt about it. The thing is about that TAKS test, even though I'm not a big proponent of standardized testing, it's not hard; it's really not that hard of a test. And the more motivated and engaged the student is, just in general with whatever vehicle you're using, the better they're going to do on that exam. We did 100% on math, 94% (and in our little school only 1 kid didn't pass), and I think we did 80% on science. So the more you're engaged, the more students are engaged using whatever vehicle you can, the better off they're going to do on that standardized test. They focus more. They pay attention more and that really, to me, for most kids that's the difference between passing and failing because it's really not that hard of a test. So, it's a difference of whether you want to or not, whether you're motivated, whether you're going to work hard, whether you can work hard. Anything that you can get them excited about that shows them that yes they can work hard and yes they can be successful, then that's beneficial. And digital storytelling is a definite way to do that. Especially like I said, the marginal students that are maybe not good readers, not good writers but they might be really creative. It allows them that vehicle of creativity.

**You mentioned about marginal students. What do you mean by marginal students?**

I mean your lower performing students. The students that may be operating just barely at grade level or just under grade level or even your students are the result of inclusion, that are special education students, learning disabled students because now we are firm believers in total 100% inclusion of students with special needs by the time you get to my class. I don't modify my instruction. I just modify what I expect to get back from them and so I have high standards. It allows them to have a product that maybe they couldn't get up in front of the class with a paper that they written and then orally present this paper, but they can get up in front of the class with a digital story coming on through the computer with a digital projector and talking about that. And so it's not like they're

presenting a dry research paper; they're just talking about this subject that they've done some studying about. So it opens it up to where it's not just standing up reading the paper which they may have difficulty creating the paper, they may have difficulty reading it or they may have difficulty creating it and reading it. So, it just gives them that level of involvement that they might not have. It puts them more on a level with their peers.

## INTERVIEW WITH INTERVIEWEE #3, 5/31/2006

**Have you used digital storytelling in a classroom?**

We did. It was our last project of the year.

**Because some how I got the impression that you didn't use digital storytelling in the classroom. Can you tell us how a little bit about how you used it, that final project maybe, whether you created digital stories?**

Our last project (I teach digital graphics and animation), and our last project was done in class and it was called 'My Life'. And the students had to create a project that lasted at least two minutes. They had to narrate and they had to use images and photographs that they brought in. They had to create their own backgrounds in Flash. And we made a project that told the story of their lives.

**So, basically you used flash and not Photo Story?**

Right.

**Did you find that the workshop that you attended last summer where we did the Photo Story sessions, did that help you or did you use any of that?**

We did and we looked at a couple of the ones that I had linked to the information that ya'll gave at the workshop. And it helped in that the kids understood how to tell a story. At first they just wanted to make a slideshow like a PowerPoint type slideshow and I had to explain to them that that was not the point. And so I think having done the workshop helped me understand that as well.

**Can you talk a little bit about what the students got out of the process of learning to tell stories with images, narration and all the other components that they used?**

I'm not sure. It was our very, very last project. We finished up on one of the last days of school right before finals. We did show several of them to the entire class and I think that some of them did throughout their whole lives, from when they were babies and on up to their senior year and others just did portions of their lives. I think they got a lot out

of it, especially the kids who were graduating. They had something to take with them and to share with their friends and family.

**Do you think it had an effect on any kind of skills that you were hoping they would pick up, things like researching or writing for an audience, making presentations, those kinds of things?**

I think it did because they had to write out what they were going to say. I think that that helped. We didn't do as much research as we could have if it would've been a different project, but this was just for them. It helped that they had to write up what they were going to say.

**Do you think their use of digital storytelling had some kind of effect on their academic performance?**

I like to hope so. I guess I really won't know that. Some I won't see next year and some I will. I did do a survey at the end of the year and I had a student that told me that they used some of the things that they learned by doing this project and others, and learning to use everything in their English class. And so, I'm glad to know that they're using the stuff that we've taught them outside of my classroom.

**You're a computer or technology teacher, is that right?**

Digital graphics and animation.

**And are your students mostly juniors and seniors?**

Sophomores, juniors and seniors; mostly juniors and seniors

**Is the course that you teach an elective?**

The course I teach is an elective. The credit that they get is required. There are other courses that they could take.

**You mention about another teacher using digital storytelling in your school, right?**

We do have another teacher that teaches the same thing and she did a similar project.

**Did you talk to her or him about digital storytelling or did you talk to other faculty members about it?**

I did tell. We had a workshop, a meeting right before school started and I told our department about it. And I shared with my co-teacher the websites and stuff that we went to and looked at, and what I made in class, the workshop; so shared that info with her.

**So, did they start using it after you told them?**

Well, she did a similar project with her students, as far as, like the 'My Life' type of project.

**In the digital story telling that you used in the classroom, have you faced any barriers, like access to software, hardware, time issues or technical help?**

I think time was a big factor for us. We did it at the very end. So, I think that if we would've done it a little further in.... But I was afraid that the students might not know the software because there is no prerequisite for this class.

**If you go back to the workshop that you attended, how did you find the organization of the workshop? Did you think that the length of it was good enough?**

Yeah, I think it was great. I like being able to have the time to go in and create my own project, bring in my own things, the time where I could go into a room and narrate my own project. I thought that was great.

**In one of your survey responses, actually your last comment, you said "I think that this workshop should be given to art teachers at the TAEA conference in November. I think that they could really use it in the class room." Can you elaborate on this a little bit please?**

I'm the technology chair of the Texas Art Educators Association. We have a conference every November, this November it's in Fort Worth. I just think that a lot of art teachers would get something out of it. Whether an elementary teacher that make it to teach a

lesson on Van Gogh to high school teachers letting students create something. It will be real beneficial.

**Do you know if there are any plans to have any kind of a workshop?**

I do not know at the moment. I'm not in charge of looking at the presentation proposals. Even though I know we are going to have a computer lab.

**Do you think it's something that they may be receptive to hearing from.... For example, we have some graduate students that could go do a workshop or maybe you could assist or other people that you know of. I guess I'm fishing a little bit here because it sounds like a good opportunity.**

This year's, this November's conference is in Fort Worth. Next year it's going to be at Moody Gardens in Galveston. And so I know that that's a year and a half a way.

**But still, I mean if we're still doing this, which I hope we will be, that's convenient enough that a large number of students could participate. Do you know how we would get in touch or who we would get in touch with to find out about that?**

Well, on the Taea.org website, they do have a list for the presentation proposal and Nina Boothe is our president who is looking over the presentation proposals. She recently sent me an e-mail and said we were looking for more proposals for the computer lab. We're going to have a MAC lab. Apple will send us the lab for free. And so we're going to have a MAC lab. Last year was our first year to do that.

**Are most art educators that you're familiar with MAC users primarily?**

It really varies. I think that depending on the schools. Ours is all PC and I think that just depending on the school. I think about 50/50.

**If you can go back to digital storytelling in the classroom, have you seen any kind of increase or decrease, any kind of affect on students' motivation or interest when they created digital stories?**

I think that this is absolutely, by far, their favorite project to do. It was an inspiration for most of them; they were so inspired to create. That they got to tell a story about themselves.

**Using this digital story telling in the classroom, did you think it changed your teaching style? Did it have any effect on your teaching style?**

I don't know that it changed my teaching style. I think that it just brought more to showing them different assignments, which I try to do anyway; show them projects from everything from their peers to professionals. I don't know that it changed my teaching style.

**Do you plan to continue doing this?**

I do. I think it was a really fun project and the students responded to it so intensely that we'll definitely do it again. Next year I'm teaching an independent study class and I think that this might be fun for them. And they'll already know the software that we have in our classroom.