# The Educational Uses of Digital Storytelling

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**Abstract:** Digital Storytelling has become a powerful instructional tool for both students and educators. This article presents an overview of Digital Storytelling and describes where it came from, how it can be used to support instruction and how students who learn to create their own digital stories improve multiple literacy skills. In addition, information is presented about the tools that can be used to support the educational use of Digital Storytelling. The article also includes a discussion of challenges and other important considerations that students and educators should be aware of before implementing the use of Digital Storytelling in the classroom, and concludes with an overview of the research that has been and needs to be conducted on the effectiveness of Digital Storytelling as a teaching and learning tool.

Author note: The *Educational Uses of Digital Storytelling* website, created at the University Houston, features example digital stories and helpful information for those interested in learning how to create their own digital stories. The website provides additional information on many of the topics discussed in this article.

## What Is Digital Storytelling?

There are many different definitions of "Digital Storytelling," but in general, they all revolve around the idea of combining the art of telling stories with a variety of digital multimedia, such as images, audio, and video. Just about all digital stories bring together some mixture of digital graphics, text, recorded audio narration, video and music to present information on a specific topic. As is the case with traditional storytelling, digital stories revolve around a chosen theme and often contain a particular viewpoint. The stories are typically just a few minutes long and have a variety of uses, including the telling of personal tales, the recounting of historical events, or as a means to inform or instruct on a particular topic.

Despite the current emphasis on multimedia technology, Digital Storytelling is not a new concept. Joe Lambert, helped Digital Storytelling get off the ground as the co-founder of the Center for Digital Storytelling (CDS), a non-profit, community arts organization in Berkeley, California. Since the early 1990s, Lambert and the CDS have provided training and assistance to people interested in creating and sharing their personal narratives (Center for Digital Storytelling, 2005). The CDS is also known for developing and disseminating the Seven Elements of Digital Storytelling, (see Table 1) which is often cited as a useful starting point to begin working with digital stories.

| **The Seven Elements of Digital Storytelling** |
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| 1. **Point of View** – what is the perspective of the author? |
| 2. **A Dramatic Question** – a question that will be answered by the end of the story. |
| 3. **Emotional Content** – serious issues that speak to us in a personal and powerful way. |
| 4. **The Gift of your Voice** – a way to personalize the story to help the audience understand the context. |

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| 5. **The Power of the Soundtrack** – music or other sounds that support the storyline. |
| 6. **Economy** – simply put, using just enough content to tell the story without overloading the viewer with too much information. |
| 7. **Pacing** – related to Economy, but specifically deals with how slowly or quickly the story progresses. |

Table 1: The Seven Elements of Digital Storytelling

**Types of Digital Stories**

There are many different types of digital stories, but it is possible to categorize the major types into the following three major groups: 1) personal narratives - stories that contain accounts of significant incidents in one's life; 2) historical documentaries – stories that examine dramatic events that help us understand the past, and 3) stories designed to inform or instruct the viewer on a particular concept or practice.

***Personal Narratives***

One of the most popular reasons for producing digital stories, is to create a personal narrative. A good example of a digital story that uses a personal narrative is *Almost Paradise*. This story provides an account of a mother bringing her children to the United States from South Korea, in search of a better life. It outlines the difficulties in coming to a new country, as well as the clashes between a mother and daughter as they each have different feelings about their lives and their heritage. This type of story has multiple benefits in an educational setting. First, other students who view the story learn about people from diverse backgrounds other than their own and they can gain an appreciation of the types of hardships faced by fellow classmates whose families have come from another country. A story such as this one can be used to facilitate discussions about current issues such as race, multiculturalism and the globalization that is taking place in today's world. In addition, a student who creates such a story can benefit from sharing that story with others and thereby use information as a way of eliminating some of the distance that foreign born students feel between themselves and their peers. A personal narrative like this one can also be a positive means for dealing with the some of the emotional family issues that were described in the story.

***Digital Stories that Examine Historical Events***

Although many personal narratives can include historical information to add context to the story, a different kind of digital story can be created from historical material that students might explore in a classroom. An audio recording of US President *Abraham Lincoln's Gettysburg Address* is used to illustrate a famous American speech. The digital story was created by using historic photographs taken during the American Civil War and other materials found on the Internet.

***Stories that Inform or Instruct***

And while it can be argued that all digital stories inform (and perhaps instruct), the distinction here is that there is room to create a separate category for stories that reflect instructional material in content areas such as math, science, health education and instructional technology.

*In Search of the Pythagoreans* is an example of a digital story that was created to help students understand the history and meaning of the Pythagorean Theorem. And of course, stories can be created using combinations of these three methods such as autobiographical stories that use historical material as the backdrop of a personal narrative.

**Digital Storytelling as an Effective Instructional Tool for Teachers**

There are numerous ways that Digital Storytelling can be used in education. One of the first decisions to be made when deciding to use this tool in the curriculum is whether an instructor will create the Digital Stories or have their students do it. Some educators may decide to create their own stories and show them to their students as a way to present new material. An engaging, multimedia-rich Digital Story can serve as an anticipatory set or hook to capture the attention of students and increasing their interest in exploring new ideas. A number of researchers support the use of anticipatory sets at the beginning of a lesson to help engage students in the learning process (Burmark, 2004; Ormrod, 2004) and as a bridge between existing knowledge and new material (Ausbel, 1978).

Teacher-created digital stories may also be used to enhance current lessons within a larger unit, as a way to facilitate discussion about the topics presented a story and as a way of making abstract or conceptual content more understandable. While many educators still lack a cohesive plan for integrating multimedia into their instruction, a growing number of teachers are interested in exploring ways to engage their students by including images, audio and video elements in their instruction. Researchers such as Hibbing and Rankin-Erikson (2003) and Boster, Meyer, Toberto, & Inge (2002) have shown that the use of multimedia in teaching helps students retain new information as well as aids in the comprehension of difficult material. And Digital Storytelling can provide educators with a powerful tool to use in their classrooms.

**Digital Storytelling as an Effective Learning Tool for Student**

Digital Storytelling can also be a potent tool for students who are taught to create their own stories. After viewing example digital stories created by their teachers or other story developers, students may be given assignments in which they are first asked to research a topic and then choose a particular point of view and, as described in the Seven Elements of Digital Storytelling, a dramatic question. This type of activity can generate interest, attention and motivation for the "digital generation" students in today's classrooms. The process can capitalize on the creative talents of students as they begin to research and tell stories of their own as they learn to use the library and the Internet to research rich, deep content while analyzing and synthesizing a wide range of content. In addition, students who participate in the creation of digital stories may develop enhanced communications skills by learning to organize their ideas, ask questions, express opinions, and construct narratives. It also can help students as they learn to create stories for an audience, and present their ideas and knowledge in an individual and meaningful way.

In addition, when digital stories are published on the Web, students have the opportunity to share their work with their peers and gain valuable experience in critiquing their own and other students' work, which can promote gains in emotional intelligence and social learning. Digital Storytelling appeals to students with diverse learning styles and can also foster collaboration when students are able to work in groups, and provides value in enhancing the student experience through personal ownership and accomplishment.

***Student Literacies***

Digital Storytelling by students provides a strong foundation in many different types of literacy, such as information literacy, visual literacy, technology literacy, and media literacy. Summarizing the work of several researchers in this field, Brown, Bryan and Brown (2005) have labeled these multiple skills that are aligned with technology as "Twenty-first Century Literacy," which they describe as the combination of:

- **Digital Literacy** – the ability to communicate with an ever-expanding community to discuss issues, gather information, and seek help;
- **Global Literacy** - the capacity to read, interpret, respond, and contextualize messages from a global perspective
- **Technology Literacy** - the ability to use computers and other technology to improve learning, productivity, and performance;
- **Visual Literacy** - the ability to understand, produce and communicate through visual images;
- **Information Literacy** - the ability to find, evaluate and synthesize information.

In the area of technology literacy, students who create digital stories improve their skills by using software that combines a variety of multimedia tools including working with text, still images, audio, video and oftentimes, Web publishing. In the area of technological literacy, Digital Storytelling can provide a meaningful reason for students to learn to digitize media content by using scanners, digital still cameras, and video cameras. In addition, as students create the narration and soundtrack for a story, they gain skills in using microphones, digitizing audio and working with music and sound effects.

Riesland (2005) notes that even as the definition of the term "Visual Literacy" is being hotly debated by researchers and educators, there is no dispute that computer technology is at the heart of the debate. She challenges the educational community to reconsider what it means to be literate in the age of technology and argues that teachers must equip their students with skills that will enable them to understand and communicate through visual modes, and "thrive in increasingly media-varied environments." Riesland goes on to call for a new definition of visual literacy education, one that will allow students to successfully navigate and communicate through new forms of multimedia, while taking on the role of information producer rather than just being information consumers.

In summary, when students are able to participate in the multiple steps of designing, creating and presenting their own digital stories, they increase a full complement of literacy skills, including:

**Research Skills:** Documenting the story, finding and analyzing pertinent information;

- **Writing Skills:** Formulating a point of view and developing a script;
- **Organization Skills:** Managing the scope of the project, the materials used and the time it takes to complete the task;
- **Technology Skills:** learning to use a variety of tools, such as digital cameras, scanners, microphones and multimedia authoring software;
- **Presentation Skills:** Deciding how to best present the story to an audience;
- **Interview Skills:** Finding sources to interview and determining questions to ask;
- **Interpersonal Skills:** Working within a group and determining individual roles for group members;
- **Problem-Solving Skills:** Learning to make decisions and overcome obstacles at all stages of the project, from inception to completion; and
- **Assessment Skills:** Gaining expertise critiquing their own and others' work.

**What are some Challenges to Students Creating their own Digital Stories?**

Digital Storytelling does present some challenges for students and educators. First, it can be argued that bad storytelling using digital media will simply lead to bad digital storytelling. Many students have trouble learning to formulate an educationally sound argument and providing students with a library of digital images and computer-based authoring software will not be beneficial to students or educators. There are many helpful resources for students and A Questioning Toolkit is a resource that can be used to introduce students to effective questioning techniques that may help them in their attempts to formulate the scripts for their own digital stories.

Another important issue for students is respect for copyright and the intellectual property of others. It is always tempting for students of all ages to use the Internet to find images, music and other material for inclusion in their digital stories. In some classrooms, the concept of educational fair use may be openly discussed, giving students some latitude in what materials they may use, while in other classrooms, the teacher school or district may have restrictions on what type of content may be used by students.

One useful strategy is for dealing with the copyright issue is for students to create their own content. Most often this will include taking pictures with a digital camera and recording audio narration with a computer microphone. However, personally created content is not the only source of usable materials. There are a variety of websites that allow users to use content that is in the public domain. Sites such as the American Memory Collection from the United States Library of Congress, the New York Public Library Picture Collection Online and the Free Kids Music website are good options for students. There are also many websites that let students and teachers use their content royalty-free for educational purposes. When searching the Internet, students can learn to check on the usage rights for the site, and be sure the site specifically states that the material can freely be shared.

**What are Other Considerations for Educators who Want to Teach Digital Storytelling to their Students?**

One of the major questions that teachers, administrators and technology support staff ask is: do the students have access to the technology they need to create digital stories? The answer should be an overwhelming YES. Simple technologies such as Microsoft Word and PowerPoint can be used to create digital stories and Microsoft's Photo Story 3 for Windows XP is a very powerful Digital Storytelling authoring program, which is available for free. Apple Computer's iMovie is a good choice for Macintosh users and more inexpensive tools are rapidly becoming available. A digital camera, a video camcorder and a scanner are usually found in most schools these days and students can use them to create still visual images and video clips that can be included in digital stories. Inexpensive computer microphones and digital voice recorders are also useful for recording audio narrations and interviews are also readily available in many classrooms.

Besides access to technology hardware and software, another important consideration is related to students' use of the Internet. Many schools use filtering programs and have restrictions on what students are allowed to do on the Internet; whether they are able to use search engines to find images for their stories and if so, download these resources. Additionally, can the school provide students and teachers with a location on a computer or server where they can save their work?

Educators should be aware that Digital Storytelling can be very time consuming. It can take many hours to work on all of the Digital Storytelling components described in this article. Teachers who wish to incorporate Digital Storytelling in their classrooms should also be aware that it may take students several attempts at creating digital stories before they demonstrate technological proficiency and an understanding of their selected topic. As with all new instructional methods, students will need time to learn what is expected of them as they begin using Digital Storytelling. A useful option for educators is to use peer review and reflection where students and teachers together have an opportunity to discuss student work and the learning process.

**What Research is Being Conducted to Demonstrate the Impact of Digital Storytelling on Teaching and Learning?**

Since 2005, educators and graduate students at the University of Houston's Laboratory for Innovative Technology in Education (LITE) have been conducting a series of research projects to evaluate the effectiveness of Digital Storytelling. In one case, three groups of public school teachers are being tracked following their participation in an intensive Digital Storytelling workshop offered at the University of Houston campus. Three groups, composed of elementary, middle and high school teachers, were shown examples of different types of digital stories and then learned to create stories they could use in their classrooms. The teachers are completing surveys that will measure and evaluate whether or not they have continued to use Digital Storytelling as a component of their instructional practice, the impact of such use and in cases, where there is no use of Digital Storytelling, what barriers occurred. Table 2 illustrates the specific research questions that are being investigated.

| **Educators who ARE USING Digital Storytelling** | **Educators who ARE NOT USING Digital Storytelling** |
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| How are you using Digital Storytelling? | Why are you not using Digital Storytelling? What are the obstacles? |
| Are you creating digital stories to show to your students? | Do you have questions about how to use Digital Storytelling in your instruction? |
| Are you teaching your students to create their own digital stories? | Are you experiencing technical problems? If so, what problems are you having? |
| If students are using Digital Storytelling, what are the outcomes? | Are you interested in additional Digital Storytelling training sessions? |
| Have you demonstrated Digital Storytelling to others? If so, to other teachers? Who else? | Are there other issues that are preventing you from using Digital Storytelling in your instruction? |
| Do you feel that Digital Storytelling has changed your teaching practice? | Are you planning to use Digital Storytelling in the future? |

Table 2: Research Questions for Teachers Who Completed a Digital Storytelling Workshop

Helen Barrett (2005) has proposed a research design to collect data about Digital Storytelling in education. In part, Barrett suggests that if Digital Storytelling is to become an accepted practice in today's schools, it will be necessary to collect data about its impact on student learning, motivation and engagement as well as teaching practices and strategies. She suggests that the following key research questions be investigated:

- How do digital stories provide evidence of deep learning?
- Under what conditions can digital stories be used to support assessment for learning?
- Under what conditions do students take ownership of their digital stories?
- What are the benefits of developing digital stories as perceived by students, teachers, administrators, and/or parents?

- What are perceived obstacles to implementing digital storytelling with P-12 students and how can they be overcome?
- How does the quality of paper-based reflection differ from digital stories?

There is no doubt that more needs to be learned about Digital Storytelling as a teaching and learning tool. The field is undergoing a tremendous growth spurt in education as more educators are learning about it and are finding ways to integrate it in their classroom activities. The research opportunities in this area are just beginning to be seen and new investigations will surely provide greater insights and understanding in how Digital Storytelling can engage, inform and enlighten new generations of students and educators to come.

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