

Blending Creativity and Technology: Digital Storytelling in Education

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Abstract: *Digital storytelling is rapidly emerging as a powerful teaching and learning tool. It is the practice of using computer based tools to tell stories with images, text, audio narration, music and even video clips and is an ideal way to combine creativity and learning during the process of education. This paper presents an overview of digital storytelling, the types of digital stories and the seven elements of digital storytelling along with its expanded and modified version. It also details the various technological tools used to produce a digital story, the skills that students acquire and the everyday challenges that educators and students face while using digital storytelling in the classroom. This paper also examines some of the research that has been conducted into the effectiveness of this technology.*

Keywords: digital storytelling, teaching, learning, education, technology

1. Introduction

Storytelling has always been a cherished tradition in all societies. The art of storytelling combined with technology is what digital storytelling is. Technology is today an integral part of the educational realm. All levels of the educational domain including kindergarten, elementary schools, high school and college's today use technology for educational purposes. New computers, software programs, and applications have eased the blend of technology with education. Digital Storytelling (DST) is a way to generate interest, attention, and motivation for the "digital generation" in today's classroom. DST "utilizes almost all of the skills students are expected to have in the 21st century [1].

Digital Storytelling is described as the art of telling different types of stories through multimedia sources. Digital storytelling at its core is thus "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 a narration, often an author's own voice" [1]. The Digital Storytelling Association [2] describes digital storytelling as "... the modern expression of the ancient art of storytelling... using digital media to create media-rich stories to tell, to share, and to preserve. Digital stories derive their power through weaving images, music, narrative, and voice

together, thereby giving deep dimension and vivid color to characters, situations, and insights." Robin [3] suggests that, 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. Digital storytelling has turned college and university classrooms into spaces of creative and critical multimedia productions.

Despite the current emphasis on multimedia technology, digital storytelling is not a new concept. The term digital storytelling was coined by Dana Atchley but it was Joe Lambert who 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 [4].

University of Houston, considered to be the forerunner of digital storytelling, describes this as the practice of using computer-based tools to tell stories. As with traditional storytelling, most digital stories focus on a specific topic and contain a particular point of view. It thus is the practice of combining the traditional sense of a narrative with digital content to create short movies that contain a strong emotional component [5]. The topics that are used in digital storytelling range from personal tales to the recounting of historical events, from exploring life in one's own community to the search for life in other corners of the universe, and literally everything in between.

2. Types of Digital Stories

There are many different types of digital stories. Robin [3] classifies digital stories into three categories: personal narratives, stories that examine historical events, and stories that are primarily used to inform or instruct.

2.1 Personal Narratives

Perhaps the most popular type of digital story is one in which the author tells of personal experiences or stories that contain accounts of significant incidents in one's life. One of the most popular reasons for producing digital stories, is to create a personal narrative that can be used to facilitate discussions about current issues such as race, multiculturalism and the globalization that is taking place in today's world. According to Robin [3] a personal narrative can also be a positive means for dealing with some emotional family issues. These stories can revolve around significant events in life and can be emotionally charged and personally meaningful to both the author and the viewer. Many subcategories of personal digital stories have been described by Lambert [6] and others and include stories that honor the memory of specific people and places, or deal with life's adventures, accomplishments, challenges, and recovery.

2.2 Historical Documentaries

These are stories that examine dramatic events that help us understand the past. Digital stories can be created from historical and archival documents. For example take an audio recording of a speech of a historical personality, combine it with pictures or photographs of that period that are available on the internet, include a narration and a historical digital story prepared by students is ready. In a classroom environment, students might use historical photographs, newspaper headlines, speeches, and other available materials to craft a story that adds depth and meaning to events from the past.

2.3 Stories that Inform or Instruct

Certain types of stories educate and enlighten the viewer on a particular concept or practice. For example, stories that contain instructional material in content areas such as math, science, health education and instructional technology, environment, diseases, ageing and the human body etc. 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.

3. The Seven Elements of Digital Storytelling

The Center for Digital Storytelling has been very influential in identifying the major components of a digital story by breaking the creative process into seven steps. This process, known as “The Seven Elements of Digital Storytelling” includes the following components:

1	Point of View	What is the main point of the story and what is the perspective of the author?
2	A Dramatic Question	A key question that keeps the viewer's attention and will be answered by the end of the story.
3	Emotional Content	Serious issues that come alive in a personal and powerful way and connects the audience to the story.
4	The Gift of your Voice	A way to personalize the story to help the audience understand the context.
5	The Power of the Soundtrack	Music or other sounds that support and embellish the story.
6	Economy	Using just enough content to tell the story without overloading the viewer with too much information
7	Pacing	The rhythm of the story and how slowly or quickly it progresses. It is related to Economy.

According to Robin and Pierson [7], since the specific requirements of an educational digital story differ from the original Seven Elements for Digital Stories, they added a few new items to make them more applicable to the types of digital stories created by students. The expanded and modified elements of the Seven Elements of Digital Storytelling are shown below:

1	The Overall Purpose of the Story
2	The Narrator's Point of View
3	A Dramatic Question or Questions
4	The Choice of Content
5	Clarity of Voice
6	Pacing of the Narrative

7	Use of a Meaningful Audio Soundtrack
8	Quality of the Images, Video & other Multimedia Elements.
9	Economy of the Story Detail
10	Good Grammar and Language Usage

4. Technology Tools for Digital Storytelling

There are a variety of tools that can support the building of a good story. These tools that can be used to prepare a digital story consists of both hardware and software. Hardware includes computers, digital camera, scanners, video recorders, CD or DVD burners, flash drive, headset, microphone etc. There are lots of free software available that can be used by students to produce a digital story. Some of the most popular ones are listed below:

4.1 Google Maps

It is used when we want to use an image of a place anywhere in the world in your story. This is particularly helpful if your story is about any historical character or event.

4.2 Wordle

It helps to generate “word clouds” from text that you provide. The clouds give greater prominence to words that appear more frequently in the source text. You can tweak your clouds with different fonts, layouts, and color schemes. The images you create with Wordle are yours to use however you like. You can print them out, or save them to the Wordle gallery to share with your friends.

4.3 Audacity

It is a audio recorder and voice and music editor that one can download for free and can be used while creating educational digital stories.

4.4 Mixbook

Is a tool that allows anyone to tell a story by creating and publishing it as a book. With images and/or text, anyone can create a photo book, an illustrated story or a scrapbook. It allows collaboration among many authors on the same book. Collaborators can be classmates or teachers within the same school or who live a world away from each other.

4.5 VoiceThread

VoiceThread is an online media album that can hold essentially any type of media like images, documents and videos and allows people to make comments in five different ways - using voice with the help of a microphone or telephone, text, audio file, or video from a webcam - and share them with anyone they wish.. A VoiceThread allows group conversations to be collected and shared in one place, from anywhere in the world.

4.6 Photoshop

It helps to create slideshows that can include music and narration and is also a powerful photoeditor tool.

4.7 Animoto

This is another popular tool that is used to create videos with photos, music and sound and therefore extremely useful while creating digital stories.

4.8 Movie Maker

Windows Movie Maker is used to make a digital story when you have video clips on your camcorder, digital camera or from another source and want to edit or combine clips into one movie and prepare them to be published or distributed on the web. Movie Maker can combine video and digital images into one project. Creating a movie in Movie Maker is divided into the following steps:

- 1) Import and add all media like images, audio, video.
- 2) Arrange them in the order you want them to appear in your movie.
- 3) Add background music, record or import narration.
- 4) Add transitions, effects, titles, overlays and credits.

5. DST in the Classroom

Digital Storytelling can be a tool for students to create different types of stories and the teachers can guide them to do it systematically. They can view a few digital stories and then be given assignments. The first task is researching a topic, choosing a point of view, applying the elements of storytelling and finally creating a finished product. This type of non-traditional activity is hugely motivating for the digital generation as it calls for both creativity and familiarity with technology.

6. Challenges while using DST as an Educational Tool

Digital storytelling is a good way to start using technology in the classroom, but integrating technology into the education system brings with it issues that need to be addressed like the following:

6.1 Copyright issues

Robin [4] states that an important issue for students is respect for copyright and the intellectual property of others. Using images, music and other materials from the internet for inclusion in their digital stories is easy and tempting for students and therefore it is the duty of teachers to warn them about copyright issues and how it is unethical and illegal to copy and paste pictures or useful information without giving due acknowledgement. The only strategy to deal with the copyright issue is for students to create their own content. This includes taking pictures with a digital camera and recording audio narration with a computer microphone. There are a variety of websites that allow users to use content that is in the public domain and students can incorporate these into their projects with correct citation.

6.2 Using irrelevant materials

Teachers must explain to their students that using extraneous or irrelevant material in their stories can hurt their stories and

take attention away from the actual topic. Mayer and Moreno [8] use the term *weeding*, to refer to this process of omitting extraneous graphics, texts, or audio from the presentations.

6.3 Too much information

Another challenge is when students try to incorporate too much information in their stories. Keeping a digital story simple will help make it more successful. It will be beneficial for students to keep the stories as effortless as possible in the beginning and then make it complicated.

7. Challenge for Teachers

Application of any new technology in the classroom brings with it challenges too. The case with Digital Storytelling is no different. The students should have access to technology that they need to create digital stories. Next problem is the time factor. Robin [4] suggests that educators need to be conscious that digital storytelling can be time consuming. 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. As for educators they "need to develop a systematic understanding of the technology, subject matter, pedagogy, and how these aspects work together"[9].

According to Robin [4] a student creating a digital story acquires different types of student literacies, or multiple skills that are aligned with technology. Described as "Twenty-first Century Literacy,"[10] they are a combination of the following.

- **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.

By creating digital stories, students improve their software skills, as well as skills in using different multimedia resources like sound, images, and video. Moreover, it will help them get acquainted more closely with technology devices. Robin [3] notes that when students are able to participate in the multiple steps of designing, creating, and presenting their own digital stories, they make use of a full complement of literacy skills including the following:

- **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.
- **Assessment Skills:** Gaining expertise critiquing their own and others' work.

8. Research on Digital storytelling.

Research studies conducted so far on the educational uses of digital storytelling have shown that the use of digital storytelling in classrooms have yielded a variety of advantages to students. They include "developing visual and multimedia literacy in students, recapturing creativity and developing, intensifying, applying, extending and nurturing it"[11]. It also supports "student understanding of subject area knowledge "increases "overall academic achievement", and improves "higher order thinking, social, language, reflection and artistic skills"[12]. Digital storytelling, as Robin[7] notes fosters student collaboration within the classroom as they get an opportunity to "share their work with peers and gain valuable experience in critiquing their own and other students' work". As a result they "develop enhanced communication skills by learning to organise their ideas, ask questions, express opinions, analyze and synthesize a wide range of content and construct narratives.

Technology including DST, allows students to gather, evaluate and amalgamate information, then reconfigure and present that information in ways that are both meaningful to the learner and demonstrate skill mastery over the technique [10]. Perhaps the greatest benefit is that it pushes students to become creators of content rather than just consumers. It fosters creativity and makes learning more interesting, stimulating and fun turning college and university classrooms into spaces of creative and critical multimedia productions.

9. Future Research

Digital storytelling is an invaluable medium for individuals to publish and share their stories. The majority of research studies on digital storytelling have focussed on the impact of storytelling on learners and on their educators . However more studies are needed to assess the efficiency of digital stories. Extensive research required to understand the potential of digital storytelling. This knowledge can assist it to advance beyond content creation in the classroom to application in the wider community. The impact of digital stories on advertisements, education, health and medicine

related fields needs to be probed so as to enable to use digital storytelling in various fields more effectively.

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