Digital Storytelling in Education and Second Language Acquisition: The State of the Art

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Abstract

Since the early days of civilization, storytelling has been used to share knowledge, values and wisdom from generation to generation. From cave inscriptions to hieroglyphics, to novels and movies, stories have always fascinated mankind and have been adopted as a means to not only preserve traditions and cultures but also to entertain and, in particular, instruct.

Over the past two decades, drastic changes have been experienced in the field of storytelling due to the advent of new media technologies (e.g. computers, smartphone, digital cameras, editing software) that have provided new tools to create and share stories more easily than ever before.

As a consequence, these technological advances have completely changed the way 21st Century students, that are routinely exposed to digital technologies, communicate, interact, process information and learn[16].

By combining traditional storytelling with new digital multimedia, Digital Storytelling(DS) has progressively emerged as a powerful tool in teaching and learning as it provides a vehicle for encouraging on one side learners' motivation, attention, reflection and active learning and, on the other side, for helping teachers in building a constructivist learning environment that foster creative problem solving due to collaboration and peer-to-peer communication[12].

In particular, DS seems to play a fundamental role in Second Language Acquisition(SLA) because, due to the mixing of the textual and the visual, it not only empowers students to develop the necessary language and literacy skills (e.g. speaking, writing, listening and reading)(6) but also it provides them with a strong foundation in what have been defined as "21st Century Skills"[15].

According to these premises, this paper aims to draw a detailed analysis about the use of DS in education, with a particular focus on SLA. It specifically points to its development from its birth in the 1980s to today, how DS has changed over the years, which theoretical framework/concepts are adopted to support its innovative use in education and what are its effects on teaching and learning.

Keywords: *Digital Storytelling, Second Language Acquisition, Innovative Learning Environments, 21st Century Skills*

1. Introduction

In the late 1980s a performance artist and video producer called Dana Atchley went on a trip with his bus and began to make short narratives of anything he found along the way. This experience evolved into a show called the "Next Exit", where he would sit around a fire, discuss his travels and then show his digital stories[5]. Digital Storytelling was born. Consequently, he started a real "Digital Storytelling Movement" which culminated in the foundation of the Center for Digital Storytelling(CDS) by Atchley and Joe Lambert in 1993. In 2015 the CDS became simply StoryCenter(SC), a non-profit community arts organization in Berkley (California), that provides training and assistance to people who want to share their personal stories. With its motto of "Listen Deeply, Tell Stories"[5], SC perfectly embodies the idea that digital stories are a fundamental way to examine feelings and beliefs because they expand the story universe by means of different media offering people deep experiences.

2. Defining Digital Storytelling

At its core, DS combines the art of telling stories with a variety of digital multimedia, included recorded audio, video clips, images and/or music. In this way, digital stories allow people to become creative storytellers, developing interactive stories that are typically just a few minutes long (from three to five minutes), have a variety of uses, revolve around a chosen theme and often contain a particular point of view[12].

A pioneer in the field, the British photographer Daniel Meadows states that digital stories are "short, personal multimedia tales told from the heart"[7], that is they are personal stories created by using digital cameras, photos and music that result in short multimedia narratives[17].

On the contrary, Robin[12] has classified digital stories into three categories:

- **Personal narratives**: stories dealing with personal experiences;
- **Historical documentaries**: stories dealing with crucial historical aspects that help people understand past events;
- **Stories designed to inform or instruct**: stories teachers create to explain different instructional material.

2.1 The Elements of Digital Storytelling

The CDS has developed the "Seven Elements of DST" that are generally considered as a starting point in the creation of digital stories: 1. *Point of view*, the purpose of the story and the author's perspective; 2. *A Dramatic Question*, a question designed to maintain the audience's attention and that will be solved at the end of the story; 3. *Emotional Content*, a content that connects the audience to the story; 4. *The Gift of Your Voice*, the personalization of narration to help audience understand the story; 5. *The Power of Soundtrack*, appropriate music or sounds supporting the story; 6. *Economy*, the use of just enough content to avoid overloading the viewer with excessive visuals and/or audio; 7. *Pacing*, the rhythm of the story and how quickly or slowly it is told[17].

However, Robin and Pearson[10] have integrated and expanded the original Seven Elements with some additional items specifically designed to use DST in the classroom: 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*.

2.2 The 8 Steps of Digital Storytelling

According to Samantha Morra[8], digital stories, in order to be successful, need to: *a.* be personal; *b.* start with the story/script; *c.* be succinct; *d.* use accessible source materials; *e.* make use of universal story items; *f.* allow collaboration at different levels.

To that end, she has developed and described the "Digital Storytelling Process"[8], that is made up of eight steps and should be helpful in the creation of digital stories:

- *Step One: Start with an idea/Write a Proposal*: choose a topic of interest related to personal experiences, historical events, educational material and so on.
- *Step Two: Research/Explore/Learn*: explore and learn about the chosen topic by creating the base for the development of the story.
- *Step Three: Writing the* Script: create a first draft version of the story in order to take ownership of the story itself and know what is worth to convey.
- *Step Four: Storyboard/Plan*: write or represent graphically all the elements of the story (e.g. images, text, music, transitions) ordered in the chronological way in which they will appear in the story, so to organize and revise the content.
- *Step Five: Gather and Create Images/Audio and Video*: choose, create and edit images, audio and video, paying attention to Copyright, Fair Use and Creative Commons.
- *Step Six: Put It All Together*: mix audio, text, video and revise all of the transitions, tone, illustration, visual hierarchy in order for the digital story to be completed.
- *Step Seven: Share*: share online the digital story in order to reach a broader audience.
- *Step Eight: Reflection and Feedback:* reflect on the work created and receive and give constructive and valuable feedback to others.

3. Theoretical Framework supporting DS in Education

As researchers suggest[3, 9] DS could be an effective educational tool only if teachers possess enough knowledge of technology and are able to integrate it into the curriculum. It is for this reason that one of the theoretical foundations of the educational uses of DS is *Technological Pedagogical Content Knowledge Theory (TPCK)* according to which teachers should have deep knowledge of how to use technology to motivate students to learn more content via digital multimedia[12].

Furthermore, there are other theories supporting the educational uses of DS:

- the *Narrative paradigm*, as it considers all forms of human communication as stories, perceived as interpretations of aspects of the real world[4].
- *Constructivism:* developed by Piaget, it states that knowledge cannot be transmitted directly to another person because people interpret what they hear according to their experience and knowledge of the world that is acquired by interacting with people and things[1];

- *Constructionism*: developed by Papert, it affirms that learning takes place in a contest where people are actively engaged in constructing external artifacts, such as digital stories. Indeed, social constructionism considers the manipulation of digital technologies as crucial to the acquisition of new knowledge because, by constructing personal artifacts, people improve self-reflection and collaboration[16].
- *Cognitivism* emphasizes the role of the environment in facilitating the learning process, conceived as a dynamic process because created by the learners themselves[14].
- *Cognitive Theory of Multimedia Learning* by Richard Mayer whose major assumptions are that learning is an active process of selecting, organizing and integrating different content and that "people learn more deeply from words and pictures than from words alone"[6].
- *Cooperative Learning Theory* because, as DS fosters collaboration while managing to reduce competition between students, it perfectly embodies the idea of peer-to-peer education, that is a group working together in order to reach the same goal.
- *Neuroscience* and *neuropsychology* have demonstrated the active role played by storytelling on our long-term memory, in particular in the process of retaining and recalling information: as with DS students are actively engaged in the construction of their own knowledge, they are better able to improve their thinking and imaginative skills[13].

4. DS in Education and Second Language Acquisition

The early use of DS in education was as a self-reflection tool aiming to reconstruct the identities of the communities[16].

Today, the advent of Web 2.0 technology has drastically changed the learning environment, which is now characterized by easy access to an abundance of information, readily-available emerging technologies and the possibility to collaborate in a simple and productive way.

Consequently, researchers and educators have found themselves in the need of equipping learners with the skills required for 21st century citizenship because, as recent literature acknowledges[11], although today's learners live in a technologically-suffused world, they do not possess what Ohler calls the "media grammar", that is the ability to meaningfully apply technology to improve learning outcomes[9]. Therefore, the Partnership for 21st century learning[15] has developed a framework of the skills today's students need to acquire, focusing in particular on the development of critical thinking, learning motivation and information literacy.

According to Brown, Bryan and Brown[2], DS provides the development of what they have defined as "21st Century Skills": 1. *Digital Literacy*, the ability to communicate in an ever-changing society by gathering information, discussing issues and seeking help; 2. *Global Literacy*, the capacity to read, interpret and contextualize information from the global community; 3. *Visual Literacy*, the ability to understand, create and communicate by using visual elements; 4. *Technology Literacy*, the ability to use computers and other technological devices to improve learning, productivity and performance; 5. *Information Literacy*, the ability to find, evaluate and synthesize information[11]. In fact, researchers[9, 12] have demonstrated that, by creating their own digital stories, students develop and improve their literacy and academic skills because, by following the DS Process, they find themselves involved in what Lambert calls "the media-production process"[5], a process that consists in creating, editing and sharing original work.

In terms of SLA, the acquisition of these skills could make students improve, on one side, on content understanding while developing[11]: 1. *Research and Planning skills* because, by researching on a particular topic, they generate ideas, questions and also gather and evaluate data from different kind of sources; 2. *Writing skills*, because struggling in defining the topic, students gain more awareness of purpose, structure and form of the story; *Organization skills*, because due to storyboarding they learn how to manage the sources, the time it takes to complete the story and reflect on how to improve weaker elements of the narration; *Problem-solving skills*, because, in order to be concise and create a good, interesting story, students learn to make decisions by critically overcoming possible obstacles; *Technology skills*, as they learn how to use not only digital cameras, but also music, video and photo-editing software; *Presentation skills*, as students face the challenge of how to best present the story to their audience, which involves critical thinking and interpretation skills in order to be persuasive; *Interpersonal skills*, because, when working in groups, learners foster self-confidence and collaboration while at the same time reduce competition by guiding their efforts towards the same goal; *Interview and Assessment skills*, as students learn how to find remarkable questions to ask and gain expertise in evaluating and critiquing their own and other's work.

In particular, researchers in SLA[3] have demonstrated that DS is powerful in fostering vocabulary acquisition because the acts of choosing a topic and conducting research together with the repetition of words and phrases help learners collect and retain even difficult content. Finally, the combination between oral and written information and non-verbal and non-written information allows L2 learners to experiment with language at a very early stage, improving their skills through the discussion and collaboration with their peers.

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