Digital stories for L2 and their development process

Celso Henrique Soufen Tumolo
Universidade Federal de Santa Catarina
celso.tumolo@ufsc.br

Abstract
Digital Stories (DSs) have been developed and used for various purposes. This article presents a reflection on their use for L2 instruction, focusing on some approaches to sustain their use, as well as on an investigation on the development process, specifically on a brief review of literature in the area of DS development and on a description of the perceptions DS developers have as to the development process, with data collected with members of a laboratory for educational technology. Thus, a combination of perspectives on DS development is provided, so as to assist their use, receptively and productively, in the realm of applied linguistics, specifically for L2 instruction.
Keywords: digital stories. educational technology. second language learning.

Resumo
Histórias digitais, ou narrativas digitais, como também são conhecidas, têm sido desenvolvidas e usadas para diversos propósitos. Este artigo apresenta uma reflexão sobre seu uso para ensino e aprendizagem de segunda língua, com foco em abordagens de ensino/aprendizagem que orietam seu uso, como também em uma investigação sobre o seu processo de desenvolvimento, especificamente em uma breve revisão da literatura na área de desenvolvimento de histórias digitais e uma descrição das percepções sobre o processo, a partir de pesquisa feita com elaboradores de histórias digitais, membros de um laboratório de tecnologia educacional. Assim, uma combinação de perspectivas sobre o processo de desenvolvimento é apresentada, de forma a assistir seu uso, receptivo e produtivo, no campo da linguística aplicada, especificamente para aquisição de segunda língua.
Palavras-chave: histórias digitais. tecnologia educacional. ensino e aprendizagem de segunda língua.

1 Introduction

Storytelling has been part of humankind, and has served as a source of entertainment as well as of information. Digital technology has, recently, been added to this ancient practice of storytelling, resulting in what is referred to as digital storytelling (DST), that is, the practice of telling stories by using digital resources. For that, digital stories (DSs) must be developed, resulting in a digital video involving, roughly, diverse media such as images, animations, videos, computer-based graphics, computer-generated text, music, and especially recorded audio narration.

DST has its beginning in projects such as the one by Dana Atchley, with the American Film Institute (HARTLEY; MCWILLIAM, 2009). Later, he and Joe Lambert, together with colleagues, founded, in the USA, the San Francisco Digital Media Center, in 1994, which, in 1998, became the Center for Digital Storytelling and, more recently, the Story Center, under the supervision of Joe Lambert and colleagues (http://storycenter.org/history). Its aim is to develop "programs which support individuals in rediscovering how to listen to each other and share first person stories", transforming "the way that community activists, educators, health and human services agencies, business professionals, and artists think about the power of personal voice in creating change" (http://storycenter.org/).

In terms of educational use of DST, Professor Bernard Robin, from University of Houston, supervisor of the Laboratory of Innovative Technology in Education – LITE[1], carries out research, based on the idea that DSs can be used as a pedagogical resource mainly as a "way to present new material […] and capture the attention of the students", as a "way to facilitate discussion about the topics presented", and as a "way of making abstract or conceptual content more understandable" (http://digitalstorytelling.coe.uh.edu).

Using innovative practices in education, especially in working with teenagers and young adults, the digital native generation used to dealing with digital technology, is very important (PRENSKY, 2012). However, there is still room to include technological tools in L2 education, showing that L2 teachers still need assistance to incorporate

[1] Along with Professor Sarah McNeil.

them in their teaching practice (MONICO; ROZENFELD, 2016). Acknowledging this, this article aims at introducing DSs as a digital resource for the development of L2, and at presenting a reflection on the procedures to develop them. For that, it presents: a) approaches that can incorporate DSs into L2 education; b) the results of a brief review of the literature in the area of DS development; and c) the results of an investigation of practical aspects, based on the perceptions as to the DS development process collected with members of the Laboratory of Innovative Technology in Education - LITE. The article ends with a summary of the main points, focusing on the idea that a combination of both theoretical and practical perspectives for DS development, provided in the article, can assist those interested in developing and using them for educational purposes, particularly for L2 development.

2 Digital stories as a tool for L2 instruction

Digital stories, in general, can be considered an audiovisual resource, having a multimodal nature, combining images and sounds. The benefits of combining images and sounds has been espoused by Mayer (2009), within his Cognitive Theory of Multimedia Learning, based, mainly, on the assumptions that there are two separate channels (auditory and visual) for processing information, and that each channel has a limited capacity. DSs, as an audiovisual resource, provides input information to the two separate channels, and the incoming information will be processed in the two channels. For that reason, its use will allow for a more efficient processing of the incoming information, since competition for the limited capacity of the working memory, responsible for online comprehension, is minimized.

DSs can be used for L2 instruction, and research has pointed out some benefits. For instance, they can be used: a) to show situations in which the targeted linguistic content is, with benefits for the use of the content in their productive language (TORRES; PONCE; PASTOR, 2012); b) to improve the listening skills and grammar knowledge (HERRON et al, 2006); c) to develop the writing and speaking skills, used inside and outside the classroom (REINDER, 2011); d) to develop oral proficiency and self-confidence, since the recording of the audio narration and feedback from instructors were

shown to be effective for L2 development (KIM, 2014); and e) to motivate students, since "many teachers report high motivation levels" with the use of DSs (REINDER, 2011, p. 1).

In addition to that, DSs allow for students to bring their different experiences into the language classroom, which can be a "great source of discussion and a good starting point for students to write about" (REINDER, 2011, p. 1), not only for the more proficient learners, but also for the less proficient ones, assisted by the language of pictures and music.

Some approaches can be used in assisting teachers to incorporate DSs into their classrooms. They can be used within content-based approach (CBA) for language instruction, that is, using subject areas for the learning of their content via the L2. Grabe and Stoller (1997), based on several successful experiences, claim that content-based approach to L2 instruction provide the general benefits of: a) exposing to a large amount of the target language while learning about content; b) allowing for contextualized learning, with explicit instruction of language and of content; c) using learners' previous knowledge; d) resulting in higher motivation with learning of content; e) relying on different learning styles; and f) allowing for relevance to the interest of the learners.

DSs can also be also be used as a project to be developed by students, following a project-based approach (PBA) to learning. In this case, rather than only receiving the input, students will actively produce the content in the target foreign language, involving the development of all the fours skills: a) reading, during the research for the content; b) writing, for the creation of the script and storyboard; c) speaking, for the production of the oral narration based on the script; and d) listening, with the oral narration of the story. Castañeda (2013) corroborates that possibility of working with projects by concluding that developing DST as a project can serve as a means to achieve a meaningful goal in the classroom, since students practice L2 in real context.

In a similar way to PBA, DSs can also be used as a task to be resolved by students, following the task-based approach (TBA) to teaching second language, known within language studies as task-based language teaching (TBLT). TBAs can be said to be derived from problem-based learning, based on the idea of 'hand-on learning', of

engaging learners and producing meaning as the result of collective experience. TBLT, specifically, stresses the importance of: a) problem-solving activities and the task as the "structuring principle of syllabus design"; b) interaction and authentic language use "through negotiation of meaning"; and c) exposure "to authentic input, and sustained meaningful use of the target language for aiding output and learner motivation" (THOMAS, 2013, p. 344).

The aforementioned approaches converge with hypotheses proposed, within the realm of applied linguistics, to explain the development of an L2. CBA is in accordance with the Input Hypothesis (KRASHEN, 1981; 1982), stressing the importance of exposure to second language meaningful input beyond the learner's current stage of linguistic competence and, at the same time, within a comprehensible level, that is, a comprehensible input. Although it is not easy to know what comprehensible input is for language learners in a classroom, DSs, as an educational video, can be used (and conceived of) with L2 learners in mind. PBA and TBA, in turn, are mostly in accordance with the Comprehensible Output Hypothesis (SWAIN, 1985), with the Interaction Hypothesis (LONG, 1985), as well as with the Noticing Hypothesis (SCHMIDT, 1990), in that they are based on the use of the L2 for interaction between teacher and students or among students for project development (DSs in the case), requiring many problems and tasks to be resolved, involving meaning negotiation, hypothesis-testing for language production, and gap noticing with learner's realization of what is known and still unknown in terms of target language.

DSs can, thus, be an effective tool for L2 instruction. They can be used to expose L2 learners to content of any nature, following the CBA, or they can be developed by L2 learners themselves, supervised by the teacher, following the PBA and TBA. Either way, their development process must be well understood by the L2 teachers, so that the whole process leads to the expected results. Next sections tackle the DS development process.

3 Developing DS: contribution from the literature

There are many aspects to be considered during the process of developing a DS. In this section, I present the general and important aspect of finding a story, the elements proposed by Joe Lambert, and some guidelines suggested by Robin and McNeil (2012), specifically considering educational settings.

3.1 Finding a story

Finding an interesting story is one important moment for the development of a DS. Lambert (2003) provides some suggestions, under the following sets: a) the story about someone important - about someone admired, someone in our relationship, or even someone to honor and remember for life; b) the story about an event - a major event, including a trip, for example, or an achievement in life, such as graduation from school; c) the story about a place - a home, a town, a park or any other place valued to the community; d) the story about an activity - a job, which gives the sense of identity; e) the story about a recovery - overcoming great challenge; f) the story of a love - romance, partnership; g) the story of a discovery - finding solutions to problems.

Other suggestions are offered by Robin (2006), in the following categories: a) personal narratives, with significant incidents, allowing for the learning of various backgrounds, with different realities, for a discussion on general issues involved, and for the elimination of distances among the students; b) historical documentaries, with important events on the past, involving research on them and the inclusion of material available to add authenticity to the story; and c) informative or instructive, with information or instructions on concepts or practices, i.e., instructional material in content areas such as math, science, etc. The author stresses, however, that there is often overlap between these categories and that a DS can be created using a combination of the three categories.

Finding a good story to tell involves personal decisions and, at the same time, may follow the suggestions given. Next, the elements that may assist the development of DSs are presented.

3.2 The elements

The Story Center has disseminated seven elements of digital storytelling, based on Lambert (2003). Although all of them are important, some deserve attention: point of view, the gift of the voice, emotional content, and the power of the soundtrack.

The elements point of view and gif of the voice reflect the author of the DSs. The point of view is related to the main point of story and the perspective of the author of the DS, showing the power of a personal expression and revealing the author. As Lambert puts it, it is the author´s version of events and his own realizations, being aware of how his/her "prejudices, expertise, and frames of reference affect the 'truth' about the story" (LAMBERT, 2003, p. 12). The gift of the voice, in turn, refers to the contribution of the story author's voice, in a truthful way, narrating the story created, personalizing the story to help the audience understand its meaning. Voices, according to Lambert (2003), tell much about people, their strengths and fragilities.

The elements emotional content and the power of the soundtrack reflect the audience, since they are meant to arouse emotion. The emotional content implies personal investment in the story on the part of the author, evoking an emotion from the audience. It is "a result of a truthful approach to emotional material […] of death and our sense of loss, of love and loneliness, of confidence and vulnerability, of acceptance and rejection" (LAMBERT, 2003, p. 14). And the power of the soundtrack refers to the realization of the effects music and other sounds have to evoke feelings and emotions, and how they can be used to support the story. As Lambert (2003) stresses, "from earlier and earlier ages we are aware of the trick that music can play on our perception of visual information [... and] of how music in a film stirs up an emotional response very different than what the visual information inherently suggests" (p. 16).

These elements can assist the development of DSs, giving them the very characteristics essential to belong within its genre. Next, the guidelines proposed by Robin and McNeil (2012) for educational contexts are presented.

3.3 The guidelines

Specifically concerned about educational uses of DST, Robin and McNeil (2012) break the whole process for the development of DSs into smaller ones and suggest 20 guidelines, within the principles of the well-established 5-step process, namely, analyze, design, develop, implement and evaluate, suggesting a sequence to be followed. Since the purpose of this article is on the processes guiding to the development of DSs, the focus presented here is on both the design as well as the development guidelines.

The design process involves the organization of the material and includes recommendations as: a) developing a well-written script, with all the details to be understood; b) creating a detailed storyboard, organizing text and images together, allowing the visualization of the project, as a blueprint; c) organizing all of the digital story materials, in ways that all the files can be easily located; d) using visually interesting images to support and strengthen the story, by selecting images that add meaning and interest to the story; e) creating useful images, by taking photos, by scanning books or magazines, or even by using image-production software; f) finding or creating high-resolution images; and g) considering copyright policies of all the material to be used.

The development process, in turn, includes recommendations as: a) using slides for the title of the DS, as well as blank slide for transitions of images and for endings, with the right timing; b) producing audio narration for the DS, with recording software, a high quality USB microphone, and saving it in an uncompressed format; c) selecting the material wisely to make up the story, being supportive of it, that might include songs, audio and/or video interviews, video clips, video produced with a camcorder or with screencasting software.

In sum, the general aspect of finding a story and the specific ones of considering the elements, as well as the guidelines for educational purposes, as aforementioned, should assist the development of DSs. However, in addition to that, information based on a practical perspective given by developers should also assist the development of DSs. For that, empirical data was collected with DS developers. The idea is, thus, to complement the specialized literature

with empirical information on the development process of DSs. That is presented next.

4 Developing DS: contribution from developers

The use of DSs as a tool for educational purposes requires understanding their development process. So, in addition to the contribution from the literature, empirical data was collected to learn what DS developers usually do. It was collected in June 2014, at the Laboratory of Innovative Technology in Education - LITE, College of Education, University of Houston, USA.

The participants were 04 members of the LITE. They were chosen because they had instructions, as LITE members, for DS development, and had just developed their own. Thus, the participants met the following criteria: a) being a LITE member; and b) having developed a DS.

The instruments used were two questionnaires on DS development process, with general and specific questions. The two questionnaires were developed online, using Survey Monkey (surveymonkey.com), following all the guidelines of the *University of Houston Committee for Protection of Human Subjects*, via the University of Houston Portal of Research called *Research Administration Management Portal* (RAMP).

Thus, the contributions by LITE members are presented below, regarding the items: 1) script, 2) storyboard, 3) media - still images, 4) media - videos, 5) audio, 6) background effect, 7) editing for the complete story, and 8) general comments.

Concerning the script, item 1, all participants answered that they wrote scripts using MS Word Processors without following templates. One said that research on the topic was useful and stressed the importance of feedback from peers and instructor as to the personal connection in the story, its length and flow.

Concerning the storyboard, item 2, three participants said they used either a word processor or Microsoft (MS) PowerPoint to create the storyboard. One participant mentioned the use of templates for that while another said that he developed the story 'on the go', meaning no storyboard was used. One participant said that creating a storyboard

requires a great deal of work and details, with images, audio scripts, music, animations, backgrounds and other effects since everything must be as clear as possible.

Concerning the still images, item 3, participants answered that they downloaded still images from the Internet, with some criteria for selection: pixel dimension, relevance to the topic, copyright restrictions. They also produced their own material, taking their own pictures, and creating their own graphics, in this case, by using Photoshop, MS paint and MS PowerPoint. Editing the still images was also mentioned by most participants, and the software used was Photoshop, MS paint, MS PowerPoint, Paint.net, and WeVideo.

Concerning videos, item 4, all of the four participants used videos in their DSs, downloaded from the Internet and/or created by themselves. For the downloaded videos, some criteria used for selection were quality and relevance to the topic. For the created videos, a DSLR[2] camera and a tripod were mentioned. In all the cases, editing the video was accomplished via the software Adobe Premiere Elements 12 and Sony Vegas Pro.

In relation to audio, item 5, all the participants answered that they included audio narration, and used the software Audacity to record it, which also allows for editing. A USB microphone was mentioned as an essential piece of equipment for better quality recording.

Concerning background sound, item 6, all the participants used music, downloaded from the Internet, mostly from Jamendo[3], attending to copyright restrictions. One participant stressed the importance of music by saying that it sets the mood of the story, making it sound better. Another stressed that it had to complement the story, but not overwhelm the user.

For the editing phase of the complete story for the DS[4], item 7, the participants, in general, mentioned Adobe Premiere Elements,

[2] DSLR stands for Digital Single-lens Reflex and refers to a digital camera "combining the optics and the mechanism of a single-lens reflex camera with a digital imaging sensor" (wikipedia).

[3] Jamendo is a website that makes available royalty free tracks (Jamendo.com).

[4] This is not to be confused with editing images or videos.

Sony Vegas Pro, Adobe Premiere Pro, iMOVie, and WeVideo, stressing that all of them can provide standard and complete tools for creating DSs. Two participants recommended Premiere Elements 12. One added that the learning curve for the software is high, but pointed out that the effort involved is rewarding, since the tools are helpful. The other stressed effects can be added to many clips or pictures at the same time, making it an adequate choice for the edition phase of the DSs.

Editing the complete story is an important part of developing a DS, in which all the pieces are assembled together, that is, with the story created as a script, organized as a storyboard, with all the media. This phase requires technical skills to deal with editing software, from the most simple, such as the Photo Story or Movie Maker, to the more sophisticated, such as Adobe Premiere Elements or Premiere Pro.

As for general comments, the participants considered important: a) knowing the specific topic and doing research to assess the multimedia resources available to be used and manipulated; b) writing the script, which helps collect the multimedia elements; c) developing a very clear storyboard, which assists organization and focus, allowing for saving time in the process; and d) being comfortable with the software to create a DS, because of the recognition to know what can and cannot be achieved using that technology.

In sum, considering the responses given related to the processes inherent to the development of DSs, it is possible to say that: 1) knowing and learning about the topic is essential; 2) scripts are necessary, profit from feedback given by peers and instructors, help collect the multimedia elements, and do not require templates; 3) storyboards, based or not on templates, function as an organizational method, where all the content, including all the media, can be presented clearly, thus, saving time; 4) still images must be used, created and/or edited, or downloaded from the Internet, attending to relevance to the topic and copyright issues; 4) videos can be used considering relevance to the topic and quality; 5) audio narration, a requirement for DSs, can be produced with audio recording software, preferably using USB microphone to provide better quality; 6) music can be used to set the mood of the story, without overwhelming the user, and can be downloaded from the Internet, attending to copyright

issues; and 7) final editing must be done using editing software, preferably within the user's comfort level.

5 Final remarks

In order to disseminate the idea of using innovative technology for L2 instruction, a few studies were mentioned referring to DSs, pointing out their benefits. Also, some approaches were addressed, to assist the decision of incorporating DSs into the classroom, namely content-based approach (CBA), project-based approach (PBA), and task-based approach (TBA).

Although there is still room for investigating the contribution of DSs within L2 instruction, it is plausible to state that, within a content-based approach, DSs can contribute with the exposure to content areas, providing meaningful input to learners, and, within a project-based approach and a task-based approach, they can promote learners' involvement in projects and tasks, making the L2 the language of the DSs to address the target audience and, possibly the language of communication among developers. Therefore, in all the cases, L2 becomes the means for the communication.

In addition to that, specialized literature was briefly presented, mostly based on two researchers in the area, namely Joe Lambert, one of the precursors of the use of DSs, mainly for purpose of social change, as well as Professor Robin, a researcher in the use of DSs for educational purposes. This provided useful insights on DS development, including suggestions, recommendations, under the names of elements and guidelines. Also, empirical data was presented with a focus on the specifics of DS development process, with a practical perspective given by four members of a laboratory for educational technology, with DS developments. The combination of the procedures suggested in the specialized literature as well as the ones elicited in the data collected can assist the development of DSs, to be incorporated in L2 instruction, with a focus on its use to expose learner to content, or with a focus on its use as a means of communication to the target audience.

The experience I have had with assisting the development of DSs as a project with learners of English as a foreign language has shown that, for the task of developing the script, they are committed to reading in the target language, with a thorough research on the topic, and to writing their script, involving their attempts to use the target language in a productive way, testing their hypothesis, and revising it for their final version, based on the important contribution of the feedback received. And for the specific task of recording the audio-narration, they are committed to telling their story, in an authentic way, with sincere tone of voice, using quite accurate pronunciation of the words in English. All this in an effort to tell their story, using English as a means of communication.

References

BRINTON, D. *The content-based classroom:* perspectives on integrating language and content. NY: Longman, 1997. p. 5-21.

CASTAÑEDA, Martha E. "I am proud that I did it and it's a piece of me": Digital storytelling in the foreign language classroom. *CALICO Journal*, v. 30, n. 1, p. 42-62, 2013. Retrieved from: <https://journals.equinoxpub.com/index.php/CALICO/article/viewFile/22910/18931>. Last accessed: May 08, 2014.

GRABE, William; STOLLER, Fredricka L. Content-based instruction: research foundations. In: STRYKER, Stephen B.; LEAVER, Betty Lou. (Eds.). *Content-based instruction in foreign language education*: Models and Methods, 1997. p. 5-21.

HARTLEY, John; MCWILLIAM, Kelly. *Story circle:* digital storytelling around the world. Chichester, UK; Malden, MA: Wiley-Blackwell, 2009.

HERRON, Carol; YORK, Holly; CORRIE, Cathleen; COLE, Steven P. A comparison study of the effects of a story-based video instructional package versus a text-based instructional package in the

intermediate-level foreign language classroom. *CALICO Journal*, v. 23, n. 2, p. 281-307, 2006. Retrieved from: <https://pdfs.semanticscholar.org/97e3/584a4519c679a1472a2857106513355f831a.pdf >. Last accessed: May 28, 2014.

KIM, SoHee. Developing autonomous learning for oral proficiency using digital storytelling. *Language Learning & Technology*, v. 18, n. 2, p. 20-35, 2014. Retrieved from: <http://llt.msu.edu/issues/june2014/action1.pdf>. Last accessed: August 18, 2014.

KRASHEN, Stephen D. *Second language acquisition and second language learning*. Oxford: Pergamon, 1981.

_____*Principles and practice in second language acquisition*. Oxford, Pergamon, 1982.

LAMBERT, Joe. *Digital storytelling cookbook and travelling companion*. Berkeley, CA: Digital Diner Press, 2003. Retrieved from: <http://dmp.osu.edu/dmac/supmaterials/Digital%20Storytelling%20Cookbook.pdf>. Last accessed: May 10, 2014.

LONG, Michael H. Input and second language acquisition theory. In: GASS, S. M.; MADDEN. C. G. (Eds.). *Input in second language acquisition*. Rowley, MA: Newbury House, 1985. p. 377-393.

MONICO, Michelli G.; ROZENFELD, Cibelle. 2016. A integração de TDICs na prática de ensino de professores de línguas estrangeiras: análise do conhecimento tecnológico pedagógico. *Horizontes de Linguística Aplicada*, v. 15, n. 2, p. 7-89, 2016. Retrieved from: <http://periodicos.unb.br/index.php/horizontesla/article/view/19532>. Last accessed: May 18, 2017.

PRENSKY, Marc. *Brain gain*: technology and the quest for digital wisdom. New York, NY: Palgrave Macmillan, 2012.

REINDERS, Hayo. Digital storytelling in the foreign language classroom**.** *English Language Teaching World Online*. 2011. Retrieved

from: <http://blog.nus.edu.sg/eltwo/2011/04/12/digital-storytelling-in-the-foreign-language-classroom>. Last accessed: April 22, 2014.

ROBIN, Bernard. The educational uses of digital storytelling. In: CRAWFORD, C. et al. (Eds.), *Proceedings of Society for Information Technology and Teacher Education International Conference 2006*, p. 709-716. Chesapeake, VA: AACE. 2006. Retrieved from: <http://faculty.coe.uh.edu/brobin/homepage/Educational-Uses-DS.pdf>. Last accessed: March 10, 2014.

ROBIN, Bernard; MCNEIL, Sarah G. What educators should know about teaching digital storytelling. *Digital Education Review*, n. 22, p. 37-51, 2012. Retrieved from: <http://revistes.ub.edu/index.php/der/article/view/11294>. Last accessed: March 10, 2014.

SCHMIDT, Richard W. The role of consciousness in second language learning. *Applied Linguistics*, v. 11, p. 206-226, 1990.

SWAIN, Merrill. Communicative competence: some roles of comprehensible input and comprehensible output in its development. In: GASS, S.; MADDEN, C. (Eds.). *Input in second language acquisition*. Rowley, MA: Newbury House, 1985. p. 235-256.

THOMAS, Michael. Task-based language teaching and CALL. In: THOMAS, M.; REINDER, H.; WARSCHAUER, M. (Eds.). *Contemporary computer-assisted language learning*. London, UK: Bloomsbury Publishing Plc, 2013. p. 341-358.

TORRES, Agustin R.; PONCE, Eva P.; PASTOR, Maria D. G. Digital storytelling as a pedagogical tool within a didactic sequence in foreign language teaching. *Digital Educational Review*, v. 22, p. 1-18, 2012. Retrieved from: <http://eric.ed.gov/?id=EJ996780>. Last accessed: April 25, 2014.

Recebido em: 10/10/2017
Aceito em: 09/02/2018

Título: Histórias digitais para L2 e seu processo de desenvolvimento