

Producing Digital Storytelling to Improve Foreign Language Learning: a Multimodal and Intersemiotic Approach

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Abstract: This paper reports the findings of a case study conducted on a 6th level classroom in a formal learning setting during the school year 2009/2010. The study aimed to contribute to a deeper understanding of the real potential of digital storytelling as a learning multimodal methodology. Several research instruments were developed for data gathering: two questionnaires; a *focus group* interview; a grid to evaluate the written productions; a grid to evaluate the digital stories and a diary to write the observations made in the classroom. The results evidenced that the building of digital stories created a student-centred learning environment that is better suited to the development of the students' writing skills than the regular learning environment. The learning experience has also strengthened students' engagement and satisfaction in the learning process.

Introduction

Siemens & Tittenberger (2009) hold that in the current educational environment we are in the midst of a conceptual and technological transformative change and Lankshear & Knobel (2008) point out that the present historical-cultural development of literacy brings great challenges which are not being properly addressed by school. New information and communication technologies are changing the way people communicate (Coiro et al., 2008). They change the available means for making meaning (Kress, 2003), they change the ways we write and interact, and they also change who we interact with (Coiro et al., 2008).

As a result of a communicative changing world (Kress, 2003), especially regarding the increasing predominance of image and of digital communicational environments, the educational system should prepare students to be multimodal communicators. The literacy pedagogy should account for the increasing variety of text forms associated to multimedia technologies and for the diversification of media channels of communication (Jenkins et al., 2009).

In foreign language learning, traditional theories of learning might be regarded as monomodal (Stein, 2008). In this sense language is the only form of representation and communication aimed at in the learning process. Digital storytelling, considered as the use of "personal digital technology to combine a number of media into a coherent narrative" (Ohler, 2008, p.1) and as "The art and craft of using new media technologies to create and relate a story" (Blomgren, 2009, p.1), might be located within a paradigmatic shift in the learning of a second language. This paradigmatic shift is characterised by a multimodal approach to the forms of representation and communication available to students to produce meaning. A multimodal theory of communication maintains that meaning is achieved through diverse modes and media which integrate a communicational whole (Kress & Leeuwen, 2001; Jewitt, 2006; Hull & Nelson, 2005; Nelson, 2006). Communication in the classroom goes beyond the linguistic mode. In a multimodal

approach language is not the only means for representation and communication available so digital storytelling is regarded as a powerful teaching and learning methodology.

The approach to writing at school might be said to be too mechanical and drab. Especially concerning foreign language learning, we might indicate that Egan's statements (1994) are still important. The author considers that the approach to writing within the learning process at school too often ignores its vital function, which is the power to create and give voice to our personal world. Egan (2005) also says that learning tools like stories or imagination are not formulas to add to the learning process they are the very heart of learning.

Perhaps writing should be essentially regarded as the construction of a structure rather than a rule based activity. Bruner (1996) argues that the narrative form is essential to build a sense of personal identity and so to find a place in one's cultural environment. Ryan (2004) stresses the fundamental importance of the narrative as a cognitive capacity to deal with our daily lives and to find out more about alternate realities. The author states that the narrative concept shouldn't be attached to a literary notion it shouldn't be exclusively associated to the phenomenon of language. She distinguishes the narrative as a textual representation from the narrative as a cognitive construction. As a cognitive construction narrativity might in fact be triggered not only by a narrative text, but for instance by music or image.

Although visual aids have been used for a long time in the second language learning classroom, they have not been viewed as a semiotic system, with a grammar of its own. They have been used as ancillary means in the learning process addressing the exclusive linguistic competence. This study argues for an extension of the communicative competence beyond language. We intend to explore the interrelationship between second language learning and other semiotic systems, such as visual communication and music. Through the creation of *mediatized stories* (Lundby, 2008) we propose a new form to produce knowledge and to communicate and to reconceptualise what it means to build text in school settings. We also propose to reconceptualise teaching and learning as holding in creative tension between students' informal "cultural codes" (Erstad & Silseth, 2008) and the formal context of school curriculum. Although the National Portuguese Curriculum is absent in what concerns developing students' multimodal and multimedia communicative competences we suggest that these competences should be attended at school.

The study

Research question

As this study was developed in a formal learning environment we needed to account for the goals and orientations of the formal curriculum. So this study integrated the following research questions:

- 1- Does the experience of constructing digital stories contribute to an effective learning of a foreign language?
- 2- Will this experience increase students' satisfaction and students' engagement in the learning process?

Following these research questions this study aimed to:

- 1- Identify the educational benefits of digital storytelling concerning written communication and the comprehension of texts and utterances in English as a foreign language;
- 2- Determine what impact the construction of digital stories has on students' satisfaction and on students' engagement in the learning process.

Methodology

A case study was carried out (Coutinho & Chaves, 2002; Yin, 2005). Several research instruments were developed for data gathering: a questionnaire that characterises the participants, a questionnaire that collects the participants' perceptions about the study; a *focus group* interview that gathers the participants' perceptions about possible differences in the intensity of learning and the participants' opinions about

preferences in the learning process; a grid to evaluate students' written productions; a grid to evaluate the digital stories and a diary to write the observations made in the classroom by the researcher.

All students involved in the study filled in an *Identification Questionnaire*. The main purpose of this questionnaire was to characterize the participants regarding: their personal access to ICTs; their experience and frequency in the use of a computer; the kind of use made of ICTs; their personal interests and habits in the reading and writing of stories either in the mother tongue or in the foreign language (English).

The *Questionnaire about the study* was developed aiming to identify students' perceptions about the learning process within foreign language learning, about the development of teamwork capabilities and the development of personal working capabilities, about the development of technical and communicative competences in the use of multimedia technologies, and about students' satisfaction and engagement during the learning experience. The *focus group* interview was conducted as we intended to lead the participants to think of and discuss about some points. Namely: differences in the intensity of foreign language learning; the participants' learning preferences and the valuation the participants put on the learning made. The participants were divided into 7 groups (one group of 4 and six groups of 3).

All the participants (22) answered the questionnaire and participated in the *focus groups*. Descriptive statistics were used for processing the data from the questionnaire. *Focus groups* interviews were transcribed and categories of analysis were identified.

The grid to evaluate the digital stories included five dimensions. Each dimension included several evaluation items. The first dimension refers to the "Verbal message". The second concerns to "Broad aspects of the digital story". The third has to do with "Technical aspects of the digital story" in which are included "Voice" and "Music and Sounds". The fourth relates to "Visual elements" and the last dimension refers to "Information sources". Each item was rated from 1 to 4. The digital stories were evaluated by three teachers of English (foreign language) at the school where the study was carried out using the mentioned grid.

The observations made and noted down in the researcher's diary intended to register the most important occurrences, reflections and interpretations that help to think critically and evaluate the learning experience implemented.

Participants' characterisation

Twenty two students (a 6th grade class) participated in this study. Fifty per cent were girls and fifty per cent were boys. Almost all the participants were eleven years old. They were quite a regular class. They were characterized as a bit disruptive group that participated in a disorganized way to whom lacked the desired effort to carry out the school tasks addressed to them. A great part of them had a computer at home and access to the Internet. Most of the students started to use a computer before the age of ten and a great part of the participants used a computer and accessed Internet every day. When using a computer the most common activity was playing games. The other two most practiced activities were chatting with friends and using the email. All the participants declared that they liked working with the computer. As far as the reading of stories in the mother tongue were concerned the majority of the learners stated that it was an activity that they liked doing although they only did it sometimes. But the reading of stories in the foreign language (English) was something that the great majority declared not liking to do. The writing of stories in the mother tongue was indicated as an activity that a good part of the learners liked to do, although again they just did it sometimes. But almost all the participants indicated that they really didn't like writing stories in English. It was reported as a too difficult activity to be performed.

Structure of the study

This study was developed during the school year 2009/2010. The study was carried out involving some English lessons in the first and second terms of the year and all the English lessons of the third term. The study also involved the "Project Work" (Área de Proyecto) lessons along the three school terms. The time scheduled within these two learning areas was not enough and so extra hours, which were mainly used

during the last term, were necessary. Altogether it was used 98 teaching periods (of 45 minutes each) with the whole class and 26 teaching periods with some groups. A 6th year class was chosen regarding that in terms of the English Foreign Language Curriculum that is the year in which students start to learn to report events in the past, an important communicative function to build a narrative. The 6th year is the second formal year in the learning of English as a foreign language for Portuguese students.

The technology available at school was not the most appropriate and the access to computers and Internet was somewhat problematic. In the first term we only had access to Internet and to several computers one third of the time. In the second and third terms the availability was similar except for the “Project Work” lessons where we had access to several computers (Table 1).

Term	1 st Term		2 nd Term		3 rd Term	
	Access to Internet	Access to several computers	Access to Internet	Access to several computers	Access to Internet	Access to several computers
English (1)	✓	✓	✓	✓	✓	✓
English (2)	X	X	X	X	X	X
Project Work	X	X	X	✓	X	✓

Table 1: Computers and Internet access available during the study

At the beginning of the study the *Identification Questionnaire* was applied. The study was structured along two main phases. The first consisted in the exploration of the concepts of Narrative and Digital Storytelling. Two narratives were deconstructed using two different story maps (Ohler, 2008; Wu & Yang, 2009). One of the narratives was a written story and the other was a short video film. This procedure was chosen in order to let the participants realize that what is meant by a narrative may assume several different representational means and forms. To explore what a digital story is some digital stories were selected. These digital stories were studied according to the messages delivered through verbal visual and aural modalities. The participants were introduced to the elements of a digital story. In our study we adapted the Seven Elements developed by the Center for Digital Storytelling (CDS) and we only used six elements: (1) *Point of view* that represents the main idea around which the narrative is developed and the perspective adopted by the authors; (2) *A dramatic question* identified as the key question of the narrative that awakens and maintains the audience interest; (3) *Emotional content* referring to the aspects that “bring to life” the narrative; (4) *Audio content* referring to the sounds and music added to impart meaning to the narrative; (5) *Composition* meaning the careful and articulated use of the different constituent parts to design the communicational ensemble and (6) *Pacing* that refers to the rhythm according to which the narrative unfolds. Afterwards the participants built an experimental digital story using the traditional story “The frog prince”.

The second phase consisted in the creation of the digital stories. We followed Ohler’s (2008) suggestions and five sub-phases were taken: *Story Planning*; *Preproduction*; *Production*; *Postproduction* and *PerformancelShowing*. Story planning involved the building of the story maps, the writing of the stories and the construction of the storyboards. A great deal of time was spent in the building of the story maps and in the writing of the stories. They were regarded as central activities. Language was used as a means of “communicating perspectives on experience and action in the world, often in contrast to alternative and competing perspective”, Gee (2004, p. 53) and as a means of calling up the participants’ creative imagination. The participants were challenged in their knowledge-building and engaged in a more personal level. It was created a student-centred learning environment. The construction of the storyboards reinforced the learning of the foreign language. Comprehension and reading skills as knowledge of vocabulary and the mastering of grammatical structures were aimed at in the construction of the storyboard. But time constraints prevented the development of the participants’ skills in the use of visual communication and so their communicative visual intentions were not so often achieved. Some visual grammar strategies were presented to the participants (how an image can communicate proximity or distance; joy or sadness; how colour can communicate meaning; framing creates meaning; the size of an element in an image can suggest

dominance and the use of colour in figure-ground contrast affects the reading of the message) but there was no time to explore them. In fact it was really difficult to get the participants to create their own images. In this regard it should be remarked that we advocate that visual communication has an important role to play in a digital storytelling learning experience. Preproduction included the collection of the media elements to integrate each digital story and the beginning of the creation of some media elements (most of the images used). Production involved the creation of the images and the procedures that the participants needed to refine the media elements in use. The final audio narrations were created, the images and music were edited, the mix of the audio narration and the music was done and all the media elements were assembled in the video editing software. The several media elements were the semiotic resources (Jewitt, 2006) used to compose the final multimodal communicational ensemble. It was developed an intersemiotic approach which means that written and oral language and visual and aural communication were used to complement each other. Postproduction included the final revision of the digital stories, the adding of titles and credits and then the final digital stories were exported. Finally, each group presented their digital story and asked the class to answer some previously prepared questions on their digital story.

At the end of the study the digital stories were evaluated by the teacher/researcher and by the other English teachers. The participants also filled in the *Questionnaire about the study* and each group discussed and presented their ideas within the *focus group* interview.

Findings

The findings of this study are reported according to: the educational benefits related to written representation and comprehension of texts and utterances in English as a foreign language; students' engagement and digital stories as new way to create meaning at school.

Educational benefits: written representation and comprehension of texts and utterances in foreign language learning

The majority of the participants (77%) involved in this study considered that they developed their writing skills and their knowledge of vocabulary. When comparing the educational benefits resulting from regular school activities to the educational benefits resulting from the construction of a digital story the majority of the participants declared that they learned better to write and to use vocabulary through the activities involved in the digital storytelling process: "We liked more so...we learnt more because we had to search for ourselves"; "We worked more on words, we had to discover them for ourselves and with textbooks is not that much"; "Because this way is more challenging, it gives a bit more work, but it's more fun"; "We learned better to build sentences in English"; "We were able to write in English all the text in our own way". A great part of the participants (68%) declared that they improved their ability to understand utterances in the foreign language and the majority of them (73%) agreed that the built digital story is more memorable than others texts built in English as a foreign language. Also the majority of the participants (73%) stated that they developed strategies to communicate.

The results concerning the interpretation of the other groups' digital stories although positive were the least positive. So the number of participants that considered that interpreting the other groups' digital stories was a good learning experience was shorter (64%). The data collected suggest that this might be explained attending to: restrictions in the use of visual communication strategies; time constraints in the interpretation of the other groups' digital stories and technical constraints in the use of the software.

With respect to the development of personal abilities to present one's ideas the results were very good. Almost all the participants (91%) stated that they improved their capacity of organizing and presenting their own ideas. It was also possible to verify that the quality of the produced written works was higher than the usual written productions. The evaluation of the digital stories evidenced that the "Verbal Message" items were all evaluated "Good" or "Very Good".

The data collected from the group discussions revealed that most of the participants considered that: through the creation of a digital story the learning of vocabulary is more intense and diversified; the language involved in the production of texts is more complex; they learned better to structure sentences; the comprehension of vocabulary and the comprehension when producing a text is greater. The evaluation of the written productions evidenced too that the complexity of the texts produced was clearly superior to the usual texts.

Although the ability to speak was not specifically aimed in this study all the participants that made the audio narration considered that they developed their ability to speak English: “We can listen to ourselves and that facilitates learning to speak”; “Making a digital story leads us to a stronger ability to speak English”. In fact from the experimental narrations to the final narrations the improvements were very significant.

In spite of the restrictions in the access to computers and the technical constraints revealed by the participants in the use of the software and also the evident lack of visual strategies to communicate and lack of visual grammar, the use of semiotic resources such as images, sounds and music to express ideas and to understand created meanings ended up revealing positive results. The majority of the participants (77%) indicated that the use of these semiotic resources was useful to express their ideas and a great part of the participants (68%) declared that these resources helped them interpreting the other groups’ digital stories.

Students’ engagement

Almost all the participants revealed interest in the different learning activities included in the digital storytelling project. A great part (54%) felt that the different learning activities were interesting and many (41%) felt that the activities were very interesting. An important finding was that although at the beginning of the study the participants stated that they didn’t like writing a story in English at the end of the study the results evidenced that half of the participants found the construction of the storyboard very interesting, half of the participants (50%) found the writing of a story in English interesting and many (45%) found the writing of a story very interesting.

About a quarter (23%) of the participants stated that their willingness to perform the proposed tasks was similar to other previous activities performed in foreign language learning but the majority of the participants (77%) revealed greater willingness. Many (45%) declared that they felt more willing to perform the proposed activities than to perform the regular activities. About a third (32%) declared that they felt a strong will to perform the activities included in the digital storytelling project. Most of the participants (77%) stated that they liked most learning the foreign language through the building of a digital story and also most of them (73%) declared that they liked best seeing and listening to the digital stories than other texts that they ever read or listened in the foreign language. About one third of the participants (32%) declared that during the study they have grown fond of communicating via technology and most of the participants (55%) stated that they have grown very fond of communicating via technology. Most of the participants (77%) considered that the learning experience of creating a digital story was challenging and they (41%) considered that it was a very challenging experience. The major challenges mentioned were: deeper work with the vocabulary; the language involved is more complex; greater number of competencies required; the process demanded higher autonomy and responsibility and need for greater commitment to work. Also most of the participants (77%) felt more responsible during the learning experience than during other regular learning experiences and from this group (36%) considered that they were a lot more responsible.

The group discussions revealed that almost all the participants preferred the learning activities included in the creation of a digital story because: the linguistic context involving the digital stories was more stimulating than the usual linguistic contexts; the linguistic context was characterized by a stronger personal relevance; the included activities were funnier; the use of non-linguistic semiotic resources made the learning experience a more stimulating one; the learning experience was more creative than the usual ones; the learning experience made possible diversified working-strategies; the learning experience represented an authentic communicative purpose and using multimedia technologies was considered an attracting thing to do. Finally almost all the participants considered that the things learned were relevant.

Digital stories as a new way to create meaning at school

The building of a digital story enabled participants to create meaning beyond language and simultaneously exploit a *transmedia* storytelling process (Jenkins et al., 2009) through which they intensified foreign language learning.

The evaluation of the seven digital stories, rated from 1 to 4, as we can see in table 2, shows that almost all the digital stories were marked “Good” or “Very good”, and only one got “Satisfactory”. However as we have mentioned before, the dimension of the “Verbal Message” was the one that revealed better results compared with the other dimensions, except for the “Information sources” dimension. The study also reveals that the participants expressed their ideas and built their “worlds” (figures 1, 2, 3 and 4) using written language, oral language, visual representation and aural representation (Kalantzis et al., 2010) to engender a communicative ensemble. This intersemiotic approach merged several different expressions into an overall meaning. As Hull & Nelson (2005, p. 2) mark “A multimodal text can create a different system of signification, one that transcends the collective contribution of its constituent parts.” So meaning was made in “multiple articulations” (Kress & Leeuwen, 2001) and the use of multimedia technologies diversified and brought new ways to work on developing self-expression.

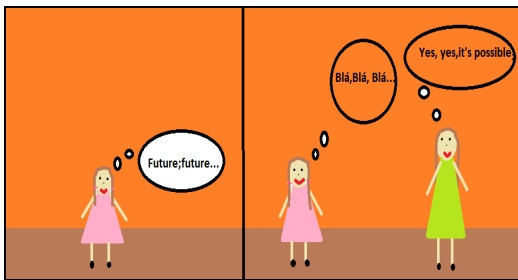


Figure 1 - Snapshot of “The dreamer girl”



Figure 2 -Snapshot of “The three friends”

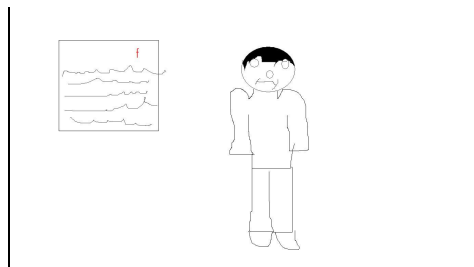


Figure 3 - Snapshot of “The multilingual boy”

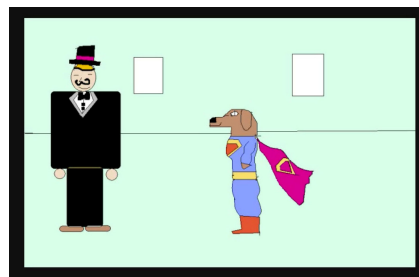


Figure 4 - Snapshot of “Super dog”

Digital story	“The dreamer girl”	“The fish who became president”	“A violent story”	“The magic tree”	“The three friends”	“The multilingual boy”	“Super dog”
Verbal Message	3,6	3,3	3,3	3,8	3,8	3,4	3,8
Broad Aspects of the Digital Story	3,3	3	2,9	3,7	4	3,1	3,4
Technical Aspects of the Digital Story	2,9	2,8	3,1	3,8	3,6	3,3	3,3
Visual Elements	3,3	3,1	2,5	3,5	3,8	2,6	3,5
Information sources	3,7	3,7	3,7	3,5	3,7	1	3,7
Quantitative Evaluation	3,3	3	3	3,7	3,8	2,7	3,5
Qualitative Evaluation	Good	Good	Good	Very good	Very good	Satisfactory	Very good

(1 to 2,4 = Needs improvement; 2,5 to 2,9= Satisfactory; 3 to 3,4= Good; 3,5 to 4= Very Good)

Table 2: Evaluation of the digital stories

Conclusion

This study indicates that the learning experience of building a digital story made possible a coherent narrative construction that translated into an improvement in the ability to write in English as a foreign language. The built digital stories let the participants generate a linguistic context which was characterized by a greater communicative strength that captured the participants' interest and fostered their willingness to perform the different learning tasks designed in the overall learning experience. The participants had the possibility to develop their ability to understand a text or utterances in English as a foreign language.

The use of non-linguistic digital resources despite the strong limitations indicated, helped the participants expressing their own ideas and helped them interpret the other groups' digital stories. The multimodal and intersemiotic approach carried out intensified the participants' self-expression, stimulated the participants' imagination, intensified foreign language learning and expanded the participants' creativity. The use of multimedia technologies served as ways to amplify the participants' voice and identity. Taking into consideration the limitations in the development of the multimodal texts created and yet the positive results evidenced one might say that the potential of such an approach is still quite unexplored.

The overall learning experience evidenced that the creation of a multimodal text like a digital story fostered students' abilities in foreign language learning and their satisfaction and engagement in the learning process. The implemented digital storytelling methodology promoted a student centred-learning environment which provided students with an opportunity to have a voice and to create a multimodal text that is meaningful to them and relevant to their life.

This study suggests that methodologies that enhance the individuality of students by focusing on their interests and experiences, in which the students themselves develop the linguistic contexts that support learning and thus become personally relevant to them, are more conducive to learning and students' motivation. This kind of approach is not common with beginners of foreign language learning, due to limited mastery on the use of language. Yet the study shows that the building of digital stories by beginners proved to be a viable approach that can bring good learning outcomes. The quality of writing was noticeably higher than the usual texts produced by students. Moreover the written stories can also be described as creative pieces of writing. But adopting such an approach requires changes to the forms of knowledge in educational context. No longer “A concept of learning as neatly compartmentalized bits of information that can be scaffolded and taught through intense and repeated training” (Drotner, 2008, p.172).

The adoption of a multimodal methodology has proved critical. As educators in a communicative changing world we should not continue to maintain language as the only means to express meaning, we should not continue to maintain the myth that children easily communicate through image and we should not continue to maintain that different meaning making modes are independent and do not interpenetrate. Therefore the formal curriculum should include other meaning making competencies beyond language.

Perhaps one of the most important is visual communication. It also means that cross-disciplinary approaches to knowledge can be translated into gains for the learning process.

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