

Narrative techniques and digital storytelling laboratory for the development of emotional and cognitive skills in school

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Abstract

Strengthened by Lambert, Atchley and Holler's international models of the construction of digital narratives, this article focuses attention on the contemporary evolution of the storytelling methodology in a digital key. The innovative teaching methodologies (for example IBL, PBL, etc.) have been experiencing digital evolution and experimentation, especially during the covid-19 pandemic in which schools have engaged in periods of distance-teaching. The use of stories on social media is now a very widespread communication practice among internet users. This narrative methodology is used in educational practice in various sectors of training not only to electrify disciplinary content but also to encourage emotional sharing and participation in the educational process. The purpose of the article is the design of an educational intervention aimed at teachers in the initial stages of a training path that aims to develop digital skills and a group atmosphere that will accompany the use of those skills in their subsequent training activities. The proposed experimental model not only collects the content to be followed during the educational intervention but also focuses attention on the use of digital technology (apps and software) to be integrated with the virtual platform for the concrete realization of digital storytelling 2.0. From a psychological point of view, it is interesting to monitor the processes of motivation, attention and participation in the didactic intervention.

Keywords 1

Digital Storytelling, Narrative techniques, Cognitive skills, Teacher training, multimedia literacy

1. Introduction

Digital storytelling is an evolution of the didactic and innovative methodologies of narratives and is a result of the digital revolution. Studies [1] have shown that this tool has a double presence: as a training tool for teachers and as a teaching tool in the classroom. Specifically, the digital and innovative teaching skills of teachers can be deepened through initial training courses (preservice) and narrative techniques, which are very valid tools according to the literature. The advent of the COVID-19 big bang has also accelerated the digital evolution of teaching tools in school practice, including storytelling. In particular, in the context of the classroom, multiple strategies have been used to improve students' digital skills through methodologies such as IBL and PBL. Digital literacy is also being promoted through the creation of digital stories [1]. Above all, teachers' digital skills are being developed in initial training courses within the discipline of information technologies (ICT). This involves the development of instrumental and content literacy for the use of digital media in the classroom. Digital storytelling is profoundly influencing cognitive and thought-forming processes; in fact, it elicits collaborations between users and influences the way information is searched for. During the COVID-19 pandemic, digital storytelling was widely used in distance learning to motivate students and capture their attention.

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In order to develop pedagogical content and didactic experience, it is becoming increasingly imminent to train teachers on these issues [3].

The centrality of the narrative derives from studies of authors such as Bruner. Bruner [4] is an American cultural psychologist who has spent an important part of his research playing an important role in psychological research for narrative thinking. Storytelling is important because everyone has a story to tell, and having the tools to effectively tell a story means having a voice and therefore the ability to express oneself and exercise active citizenship in the universe. Digital narration is central to many interdisciplinary and multidisciplinary studies because it is a typically human trait and is a way not only to tell reality but also to understand it. It is a tool through which experiences are lived, and therefore, a trace of continuity can be found in this fluid development lived from birth. Tools of speech, of communication, even nonverbal, and tools of cognition and memory collectively offer us this extremely powerful ability to narrate life, which is typically a human quality [5]. If the concept of digital is combined with narration, we come to speak of contemporary narratives that concern a plurality of communicative actions that usually take place on the web today. Think of Stories, then of the stories and narratives of social networks such as Facebook, Instagram, LinkedIn and TikTok. We immediately realise how these narratives are nothing more than the analogical life that we live but build a sort of amplification of the physical reality that we live with this continuous experience of the digital.

The narratives obviously assume a great centrality not only as a communicative fact but also as an educational fact.

Digital storytelling supports student learning and enables teachers to adopt innovative and improved teaching methods. Rahiem's recent study [6] focuses on the experiences of the storytelling – art – science club in Jakarta in Indonesia. This experimentation confirms that digital storytelling is also the tool to mediate the inclusion of immigrant students tending to social exclusion. As Nisi and colleagues [7] note, inclusion not only oases content but also requires a reflection on the requirements of a new platform for creating stories on the subject of intangible cultural heritage (ICH).

The Parsazadeh et al. [8], integrates computational thinking (CT) (it is a problem solving skill that can motivate students to learn English through the method: present, practice and produce) with digital storytelling. An improvement in performance and motivation emerges from this experimentation.

The study by Parsons and colleagues [9] illustrates the project funded by the Froebel Trust and co-built with professionals and families. The project used innovative digital storytelling to explore the experiences and perspectives of five 4-year-old autistic children and their families as the children prepared to make the transition from daycare to primary school. Underlining the inclusive value of this teaching methodology. In addition, further experiments concern the intervention of Narrative Experiences Online (NEON) centered on the use of digital storytelling that describes recovery from health problems [10].

A more contemporary analysis concerns the study by Marcos-García and others [11] on digital storytelling applied to social networks or through the use of augmented or virtual reality [12]. The results show that this tool cooperates in the construction of the digital environment. Finally, the study by Brusk, & Engström [13]. analyzes a case of inclusive transmedia storytelling production of the Marvinter project.

The aim was to provide a shared cultural experience that includes people with visual or hearing impairments. The psychological perspective is that storytelling is a connective tissue of our experiences, and this is where digital comes in.

2. Contemporary Experiments in Digital Storytelling

Viewing stories reveals a very powerful tool such as the voice: digital narratives are told directly with the voice of the author, this is a peculiarity compared to other videos and other contents that are usually seen on the Internet. What is striking is the power of this story, which is not precise but imperfect; it is not 100% polished and clean, but it is honest, and it is a true story. However, it happens that many stories have nothing true. The exercise is on the structure of the narrative; therefore, the narration is

built according to certain rules, but there is no putting into play a personal story, strong and powerful, which immediately resonates with interiority. You see many stories with great potential, but you do not go all the way, or there are attempts to field a personal story with a lack of means: good story but badly told. The workshops provide the necessary tools, not only to build stories that are artistically elegant but also to develop the expressive potential in the subject and the narrative urgency of the subject itself. Therefore, the maximum of one's expressive capacity is aligned to tell, in the right way, with the correct semiosis and with the appropriate language, the narration [14].

Today there are tools such as weblogs, YouTube and Flickr that allow users to share personal stories and personal interpretations of reality. They also allow you to comment on these stories and expand them through retweets and bounces that are possible. These viral logics of narrative contagion characterise the functioning of contemporary media. In the eighties, these tools clearly were not there just as there was no Internet.

The narratives were produced to be seen collectively, and then recordings were made on cassettes or on LaserDisc and were projected in the communities in which these stories were born, so they were basically community-building tools. The power of narration not only allows the individual to express himself but also builds connective tissue within the experiences lived by the individual to give shape and also direction to the individual's life path and at the same time works as a glue in the construction of community. The purpose of the narration, despite the passages and transformations between the old and the new technologies that have occurred in the last 40–50 years, is always to communicate significant fragments of one's experiences. The narrative can be considered as a sort of metamedium, that is, an uber medium, therefore a super medium, which crosses the media with which one expresses himself. It is a medium created by our mind that serves to represent, understand and reflect on experiences and events [15]. According to many scholars, the interpretative and understanding capacity of human beings is based on the narrative structure of the mind; that is, reality is understood in a narrative way. Experience structures reality in a diachronic order, so we put ourselves in a temporal sequence. The perception of time is in itself a narrative perception, and the experiences are placed within this temporal continuum of personal life which, expanding, goes beyond the boundaries of one's own existence in the history of the community. It is a skill, that of man, which is given by the need to make sense of the information that is perceived, such as the colours that surround us. The flow of experiences is placed, by the mind, in a narrative experience that allows us to remember events and make sense of experiences. The narratives therefore act as a support to our cognitive experience and expand the capacity of memory reconstruction [16]. The so-called mnemonic traces of this type of experience are consolidated through images and a series of other qualities that we can articulate through the experience of reality. The current transposition to media messages and the circulation of media contents lead today's consumer to a sort of appropriation of the different information and experiences of others' narratives that compose a contemporary experience articulated between analog and digital. The starting assumption is that everyone has a story to tell; technologies enhance the meaning of the story to convey and amplify the narrator's voice. There are at least two models of digital storytelling narration: one of these is the classic model, which involves narration through autobiographical stories, centred on the life of the narrator, organised in digital formats through an audio narration. Around this audio narration, as if it were a podcast, images that give greater power to the narration are built: the exercise of classic digital narration starts from writing a short text (150–300 words) – the shorter, the more powerful – words must be few but good. From that text, which is a subtraction operation, that is, the subject identifies a theme that is dear to them, writes a draft that is subsequently subtracted and subtracted and then shared with the other subjects who participate until the right narrative structure is found. At the end, the elements of this short report are placed in the right place in the right way with technical competence that is part of the training exercise in the construction of the narrative. This skill allows the subject to acquire that empowerment with respect to his or her expressive capacity, and then the sequence of images is built around the text, which can be photographs and drawings mounted together with video editing techniques. The editing tools today are accessible to everyone as demonstrated by the online stories that many post [17]. Very often the subjects, even the most fragile and marginalised in today's society, have access to technologies as devices that allow them to build narratives. However, not only do they lack the technical competence, but above all, they also lack the capacity for self-listening that allows them to honestly lead to a powerful autobiographical narration. The classic model involves the narration of autobiographical story forms in digital formats through first-

person audio that presents a structure similar to that of a traditional tale. Then there is another model that appeared starting in 2000 called web 2.0 model or digital storytelling 2.0. The evolution of the web has had several lives, and now web historians place these evolutions in categories to give order through a great narration of the history of the web, but while these technologies evolve, the authors of the so-called web 2.0 described this transformation as a passage of the web from passive to active: users become producers to consumers, and digital storytelling 2.0 blogs emerge. The narratives are characterised by greater interactivity; they offer a possibility to modify the story and co-construct this story by becoming co-authors, as the structure is not rigidly predefined. In the classical Berkeley tradition, the structure is obviously not only predefined but also closed because it is a narrative product that has a beginning and an end [18]. In Digital Story Telling (DST) 2.0, meanwhile, the idea is that it is possible to use elements that, even without necessarily using an audio narration, exploit the potential of web 2.0 in this expanded narrative structure, which can be implemented by the observer of the content, in a typically reticular and interactive manner. The types that can be developed with digital media, particularly for the production of digital storytelling, are stories that tell of important people in our life; stories that tell moments of transition, of decision, of closure crisis, of discontinuity, of transformation, of restructuring; stories that tell significant autobiographical anecdotes; and stories that tell what we would like to achieve and therefore focus on in the past and in the future.

2.1. DST theory

To produce digital narratives, it is necessary to possess or acquire in an educational process, such as in a workshop, skills and knowledge concerning both the traditional methods of writing and narration; therefore, the workshops carried out on digital narratives are essentially writing laboratories. Creative autobiographical and technological skills for media production allow to technically realise these small products. As a side dish, transversally, organisational skills of problem-solving and project management are needed, which together with the right amount of creativity make it possible to create these products. Many skills are brought into play in digital action. Even if the main lever of these narratives is to build one's own narrative and autobiographical history, here the scientific interest is to use this practice to bring out media skills. The aim is to rediscover digital citizenship. The studies [19] we have conducted on digital narratives often emphasise your dynamics, not only the technological ones but also the motivational ones, which allow the student to learn in a work-project context. This immersive experience, which is carried out through laboratories for DST on a weekend with long hours, allows you to start from the idea of writing, storyboarding, realisation and dissemination of the product. This intensively focused collective and collaborative experience also activates an extremely powerful motivational lever [20]. The works on DST are centred on the student who finds, through the use of these media, support for his voice and are interesting both for the narrative and expressive aspects of the narratives themselves, which if used in an educational context are loaded with a further value, which is to learn how to use expression representation systems in a digital context.

The development of media education allows you to teach how to effectively transmit your messages by contextualising them for the communication channel you are using. Students then learn to learn with the media and learn to think critically about the media. Among the authors who have dealt with digital storytelling were Lambert, Atchley and Holler [21]. The latter is always an American author, referable to the explored context of narratives and who deals with innovation, technologies and forms of expression. He also worked, in the early 2000s, to systematise these ideas of digital narratives for educational purposes. He writes pages, extremely interesting and much cited, which allow the intervention on digital narratives to be made operational through indications of the steps to be taken and implemented to achieve a quality product. Holler therefore refers several times to the quality of DSTs and the opportunities they offer to develop technological skills and to develop critical thinking and creativity, which, with the right motivational lever, improves the written expression and the overall expressive capacity of the subjects. Thus, we start from digital storytelling at school because it allows students to express their voice, but in reality it is extremely useful for writing skills to speak correctly and also to learn the use of technologies. The technicalities that accompany the narrative are equally important, and therefore, there is an advantage on several levels. Another dimension, that of creative

thinking, very often in the school is put on the sidelines of educational objectives; instead, in many academic school contexts a lot of attention is paid to narratives, as in Northern Europe and the United States. The process of creating a story has rules – it has grammar, as Gianni Rodari would say [22]. Creativity must be practiced to develop creative thinking; creativity alone without the use of technologies does not go anywhere. Technological skills, learned by doing, bring out talents in media productions that find extremely gratifying ways of personal expressiveness. These stories are made with joy by students who learn to organise a thought in an orderly way, to put in order their often autobiographical narration, and in doing so, there is an exercise in writing and therefore in syntax, grammar and spelling but also in expressive grammar in the media [23]. Another construct that has developed is that of digital identity, that is, the ability to place this content within a digital ecosystem in a dissemination operation and to understand how and which register to use, how to dialogue with other texts and how to position your digital identity. Many activities can arise from a DST intervention; the narratives can therefore be used as a teaching and learning methodology, which is active and constructive, because they can also stimulate discussion, comparison, reflection and sharing through personal products that students realise. In the classroom, the stories discussed are subject to further processing and are then uploaded to a webpage, becoming the domain of the web. From there, comments and interactions are born, and the possibilities inside and outside the class multiply as a bridge between different classes and between different realities [24]. The narration is mainly an autobiographical personal style, and this can also motivate the research, study and participation of the class in activities that dig into the narratives of the subjects, or it is also possible to choose to use a narration with a different attitude, such as documentary and historical. An example, in this direction, is the product made by the BBC, *Capture Wales and Telling Lies* [25], an experience made a few years ago. It is a community narrative experience in Wales; the BBC intervenes as an activator of a collective memory construction process that starts from the narration of the subjects. It is a lever to build a memory together and is a story of a place or a territory that uses narration.

3. An Example of Online Didactic Planning

Within the course of communication technologies (ICT) in the preservice path of the teachers of the University of Foggia, a training course was designed aimed at the self-determination of teachers and the construction of educational skills for subsequent entry into the school. In fact, this professionalism aims to develop awareness in future students in emotional and cognitive terms. To this end, a didactic training workshop was structured (which teachers will experience first-hand and then in the classroom) on the model of Lambert's seven elements [26] and Illera's contemporary experiments. [27]. The workshop aims to acquire techniques for the production of digital narratives, multimedia objects that combine photographs, music, films, voices and sounds in short digital videos (2–5 min). Digital storytelling promotes the development of digital, linguistic and artistic skills by promoting a new form of literacy in the use of new media and facilitating the processes of writing and reading through the multimodal use of multiple languages for communication.

The workshop is entirely organised in practical laboratory activities to transmit skills and indications relating to the production of digital storytelling.

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A study by Rodriguez-Illera [28] investigates the reasons behind publication and the tools used to create posts that take on the nature of digital stories. To obtain this information, a semistructured interview is administered to 12 Spanish teenagers between 12 and 20 years old. The reasons for creating posts are to communicate positive events in one's life, to induce interest in oneself and to reflect on personal or social behaviour. The most recurrent contents are physical appearance, cheerful situations and interesting activities. The tools adopted to create the post, such as filters and modifications, are useful for perfecting the visible reality and adapt to the type of recipient. The aim is to get out of anonymity or adapt to the expectations of followers or share reflections with the social environment. Regarding response time, the young people postpone the publication of the answers, and the older participants check their posts frequently. Respondents do not place so much emphasis on differentiating between private and public profiles but rather on a sense of precaution in posting information that I do not want to make public. There is total consensus among respondents that posts on violent, offensive and highly personal topics are prohibited. Technology also mediates the type of content; for example, Instagram conveys photos more than anything else instead of Twitter comments. A previous study (RL) probes the use of digital storytelling through a questionnaire aimed at children between 12 and 22 years (Spanish, Chilean, Colombian) between 2017 and 2018. The questionnaire investigates the sociodemographic characteristics, technologies adopted, posting habits, post content, post sources, followers, time spent on online publications and posted topics. The most used networks are WhatsApp, e-mail, Instagram, Facebook and YouTube. The research shows that the main types of posts are photos and selfies, 77% of posters create their own content while 39.52% get it from the Internet and 34.4% of respondents spend between one and four minutes creating and the publication of a content. The main topics interviewees post on are hobbies, tastes, passions, places and important people. It is published more frequently in the afternoon and in the evening, and posts are shared mainly with contacts or friends. In addition, the three main networks on which they follow profiles that they do not know personally are YouTube (54.1%), Instagram (35.1%) and Twitter (26.5%). Young people post more photos and videos, while boys use social networks to have fun and write opinions. Most Internet users publish little information. Their business is to look at photos, read comments and listen to music, often without sharing their posts. In contrast to this type of user, active users create content as well as share it. The photos act as tools that convey their experiences and identity; it is therefore a communicative artifact that mediates small stories. These practices lead to the maturation of digital skills acquired outside the academy: create and edit posts, use your voice and participate and reflect through social networks.

4. Conclusion

Schools create narratives not only with children but also with students up to upper-secondary school. The aim is not to radically innovate educational processes every time but to try to implement practices that work. The already tested application allows you to begin without having to start from scratch and repeating the mistakes of others, taking advantage of some pioneers who gave us the tools to do things properly. In most cases, the reference methodology is digital storytelling. In the educational field in Italy, there are several traditions; here, we will refer to the model adopted by the University of Foggia, which is currently covering this practice. In the past, digital storytelling has met with great success, and some PhD students have also used storytelling later and in other universities such as the University of Salento. There are other significant groups: one at the University of Padua, which refers to Petrucco [29], and another at the University of Turin with the Parola group [30], yet another in Ferrara with Professor Ganino [31]. These professors acted as activators of innovative processes in the world of schools. From an educational point of view, the assumption is that narration is a strategic resource to facilitate learning processes, with the possibility of sharing knowledge and building shared narratives. This presupposition arises from the certainty that narrative thought has a connective capacity to construct meaning through a dialogic interpretation of reality. This process originates from the narrative forms that characterise the primary orality and is therefore a mix of primordial and evolutionary ones of our civilisation, which are exemplified by the encounter between human beings and the structuring of social relations through the form of narration and the historicisation of these bonds through tales and stories. The stories allow for continuity in the civilisation process. Walter Ong [32], extraordinary scholar and giant of contemporary thought, underlines how the new electronic orality has surprising similarities with the older one for its 'participatory mysticism', that is, for the sense of community, for the concentration on the present moment and even for the formulaic use of some articulations of the narration. The narrative, in the primary form, was a strategic resource to support the processes of memorisation and learning and similarly, says Ong [32]; this also happens in the forms of secondary orality that characterise contemporary media. The presence of the story is almost tribal: this idea of tribalisation present on the web returns and of how orality, in its secondary organisation typical of current forms, is the glue of this form of web tribalisation. The secondary orality, therefore, even if radically different from the primary one, changes the primary orality, which was the only form of expression; there were no other media, and the only way to communicate, teach and educate was that of word. However, the novelty of secondary orality, in an extremely different hypertechnological context and with the plurality of languages, maintains similar characteristics because it has this element of community and this connective tissue that allows you to hear a group speak by hearing the voice of an individual [33]. While written or printed text has the characteristic of making individuals withdraw into themselves and therefore of going in depth and requiring silence, concentration and an inner dialogue between the subject and the written word, orality also in the secondary form (of TikTok, for example) has instead the potential of immediacy and also of lightness of the spoken speech. This clearly takes on different characteristics from the orality of a small circle around a fire in a village 10,000 years ago, but it somehow has a continuity with that experience because of its nature of community dimension and immediacy. Secondary orality, according to another giant of communication studies, Marshall McLuhan [34], is the engine of the so-called global village; it is the engine of that collective intelligence, as Peeler called it, that characterises the contemporary functions and of the global villages that are those tribes distributed on the web that go beyond the dimension of the place and of contemporary societies that reorganise themselves around common interests and in new dialogic forms but that recall the forms of primary orality. The experience of human things ends up taking the form of the narratives we use to speak. So our experience of the world we live in and the set of perceptions, sensations, colours and smells characterise our daily experience in a continuously diachronic dimension and are therefore extended over time. The perception of time is also a substantially human characteristic; humans have this extremely powerful thing called memory that allows them to not only place events in the past but also predict the future and therefore build this chain of experiences between past and future in a human linear logic [35]. This experience of time finds meaning and reorganisation through narrative reforms.

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