

Proceedings

Engaging in the Classroom: Learning and Teaching through Digital Stories [†]

Francesca Marone

Department of Humanities, University of Naples Federico II, Napoli 80121, Italy; fmarone@unina.it

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Abstract: This article considers the results of a survey that the University of Naples Federico II conducted with a group of teachers attending the *PAS—Percorsi di abilitazione speciale* (training programmes for the achievement of the professional teaching qualification) (The *PAS*, as provided by DDG n. 58 of 25 July 2013, published in the Official Gazette of 30 July, instituted by Afam Athenaeums and Institutions yearly, are training programmes for obtaining qualification as a teacher for pre-primary, primary and secondary schools in Italy)—through the experimental use of Digital Storytelling. The methodology used for the workshop, adopted within the course of Pedagogy of Learning Processes, involved a group of nearly 80 teachers of different subjects, so that perceptions and reflections could be explored in relation to possible disciplinary applications of the digital narration method.

Keywords: digital storytelling; visual storytelling; teaching training; reflective learning

1. Introduction

At the international level, there is already a broad diffusion of the methods of intervention based on the observation and the analysis of video sessions recorded to facilitate and improve the ability of reflecting, enhancing awareness of the dynamics displayed, increase the sense of professional auto-efficacy, promote innovation and improve the teaching processes.

In this case, our purpose was to integrate contents related to learning/teaching from the psychopedagogic point of view with the elaboration of digital products. Teaching focuses on giving a general view on theories and models that represented and still represent research orientations which are currently significant regarding education/learning, with particular attention to the cognitive, affective and relational dimensions and to the issues intrinsic in the educational relationship.

Lessons included both an in-depth analysis of the theoretical and methodological aspects of teaching, and a critical analysis of instruments to be used for the realisation of a teaching plan with digital media in the classroom.

Starting from the study of the most recent contributions to the cognitive neurosciences about the relationship between development and learning, action and cognition, emerges the structural role of culture in the development of individuals. This in turn affects the learning motivation that increases the sense of efficacy and the motivational role in the learning context.

The digital story has been an instrument for the training of teachers who had to address theoretical-applicative issues regarding pedagogy in different disciplines with the use of information and communication technologies. It has been intended to concentrate reflection on the use of information technology instruments in a general overview of the concept according to which new technologies are considered to be not only cognitive tools—powerful allies for the achievement of objectives that the society of knowledge pursues—but also reflexive devices. Combining critical

reflection and workshop activities, the training programme had the objective to offer, moreover, a space dedicated to the elaboration and realisation of learning units that contextualized the subjects treated in specialized courses related to the single subjects of the teachers in training, representing a profitable moment of thought and discussion also in the prospect of writing the final thesis of their specialisation programme.

2. Materials and Methods

2.1. The Operational Contexts of the Research: The PAS (*Percorsi di Abilitazione Speciale, Training Programmes for the achievement of the Professional Teaching Qualification*)

In contrast with the *TFA* (*tirocinio formativo attivo*, training internship), aimed at fostering the acquisition of the teaching qualification for middle schools and high schools—fundamental to gain access to the open competitive exam for public teaching—the PAS are addressed to fixed term contract teachers who have been appointed for at least three years in public and comprehensive schools.

Special qualification programmes have a “contingent” nature interrelated with the circumscribed objectives of the managing director of school personnel as stated in the Decree n. 58 dated 25 July 2013. They are determined by the changes that have marked the Italian school system in these past few years and the reorganisation of the procedures for teacher training [1]. These courses are therefore often perceived as a regularisation procedure for the so-called historically temporary teachers.

Nevertheless, the PAS is an important challenge not only for the Italian educational system, but also, and above all, for pedagogical research that is linked to the goals of the ministerial directives, which make sense only if they are intimately connected to the reflection on aspects such as the wellbeing and the motivation of the teachers [2].

Consistently with a perspective that is theoretical and practical at the same time, the Department of Humanities of the University of Naples, Federico II, has activated an educational program that is modulated and diversified. It is able to implement the objectives of preparation with regard to the field of study and in the meantime to develop metacognitive strategies in order to help the future teachers progress in apprenticeship opportunities. In particular, one of the objects of the *Pedagogy of the teaching and learning process* course consists in utilizing knowledge and personal aptitudes of the learner, by attributing a key role to individual experiences [3].

Furthermore, the recent school reform ascribes to the development of digital skills a leading role in the teachers’ optimization of professional skills [4]. The *Piano Nazionale Scuola Digitale* (PNSD; National “Digital School” Plan), official document of the Ministry of Education, University and Research, part of the law 107/2015, aimed to promote “the innovation of the school system and the opportunities of digital education”, gives particular importance to digital storytelling, an instrument of “digital creativity”, able to support transversal learning). In this sense, the course of Pedagogy of the teaching/learning process was focused on promoting the synergy between the technical dimension and the epistemological and cultural dimension, where the interaction teacher/learner and the enhancement of the perceived experience of the teacher following the training allowed a dynamic integration of digital and multimodal elements.

2.2. What is Storytelling?

Giving a precise definition of Digital Storytelling is not easy today, since its technique is complex and aimed to integrate narrative practices, stories and mash-ups of media contents (fiction, movies, books, news, programs for editing, elaboration of images or sounds and so on), that deal with different worlds. A digital story is a brief narration of an event belonging to personal or academic experience, integrating different languages: some typical of narration, some typical of a screenplay, adding the personal voice to images, titles, effects and transitions that run on the screen, at times accompanied by sounds or music that give rhythm to the narration.

However, the elements that typify it and make it differ from the ordinary practice of putting some media material together to produce a video lie in its characteristic of being founded on personal stories and, above all, in the precise intent of sharing the narration with other people through the channels offered by the web, in a sort of telematic public sphere. This peculiar aspect of the social use of new media is particularly interesting, as this is not only a multimodal product, but also can properly be called a process, that is, it does not end with its realisation, but integrates and keeps on living in a pattern formed by social actors, technological artefacts and precise intentions.

One of the advantages of Digital Storytelling resides in its active methodology, able to promote experiential learning, that is a learning pattern based on direct experience. To tell about oneself, sharing one's personal pathway to knowledge activates a transforming dynamic in which telling is learning [5].

Besides, a *digital story* nurtures the active acquisition of knowledge in a given field at the same time as it stimulates creativity, multi-disciplinarity and the explication of transversal skills. Participants are authors and at the same time consumers of the media product, and the shared use of new technologies accustoms them to cooperation, becoming an effective instrument of support both for the analysis and for the production of texts. The forms of teaching/learning imply evaluation, intended in a qualitative and transformative sense and evolving into the ability to activate self-evaluation paths.

2.3. The art of Telling a Story

The stories told should be very similar but the success of the device in terms of learning is bound to personal expression, to the ability of emotional involvement, to the power of imagination and shared values [6]. The crux of the storytelling is the intersection set up between the narrative representation of reality and the interpretative processes of projection and reflection, especially when one intends to reach a heterogeneous audience. The PAS have been marked by a substantial lack of homogeneity of the participants, in the first place due to their age. There were some of them who were progressing easily and quickly, while others appeared demotivated and distracted, asking for more attention and empathy for their category (non-qualified temporary teachers) which is under stress (we remind the reader that attendance in the course was compulsory, and the participants who were working had no paid days off). It is to be underlined, therefore, that the use of the diversified and cooperative time of the digital resources helped to solve the difficulties due to the lack of homogeneity in the audience.

The role of cornerstone has been performed by some characteristics of the Digital Story in the creation of stories: aspects like brevity (videos no longer than five minutes) and the interplay between narration and screenplay with technological abilities revealed to be particularly substantial in a training course destined to temporary teachers, whose considerations regarding the method's advantages or level of criticality blended with those of personal identity and professional experiences.

As the technological device was shared, every narrative voice converged in an emotional and relational direction, where distancing and identification provided several readings of reality [7]. This device, consisting in giving a narrative voice to people belonging to a professional category marked by pessimism, a sense of injustice and apathy towards the qualifying course, was a valuable antidote to the personal difficulties of a "human job" in which "the one in front of me has a surname, a name and a story; he/she consequently exists in his/her singularity and difference. The situation involving us is not comparable to any other, even if I can trace some of its aspects in the theory described" [8].

3. Results

3.1. For a Reflective Learning

As part of a course in some ways different from the pre-service training [9,10], the workshop meant to focus on the role of innovative practices, such as images, photographs, scanned material, videos, music, voice or sound effects, in the consolidated practices of temporary teachers. The

development of digital skills as a significant instrument for the reflexion of each teacher consisted in the use of seven basic skills of digital storytelling [11–13].

Building a digital story starts from the ideation of a map of the tale, utilizing a story board: a plot, paper and pencil, later uploaded into the pc. The narrative path and the screenplay, the division in sequences accompanied by notes on overlaid texts, on images and their duration, on the visual effects, on the soundtrack, on the voice-over, etc.

Here are the 10 titles of digital storytelling produced by the group of teachers: “I learn, therefore I am”, “One never stops learning”, “Journey in the Mathmagic world”, “Learning: to each his own”, “Brains that count”, “From experience to learning”, “In the footsteps of the history of teaching/learning: from Socrates to Recalcati”, “Non-verbal learning forms”, “Learning to survive”, “The technology of learning”.

Through digital storytelling 5 different directions of application have been put in place: the report of everyday life stories, describing the issue of learning (presentation of solved or to-be-solved problems according to disciplinary methods and techniques); the historical and narrative explanation of important theories or scientific principles and/or the presentation of authors (historical and emotional contextualisation of key concepts in the disciplines); the documentation of personal teaching experiences (showcase portfolio); the reflection on personal progress and the progress of others in learning (metacognition); the discovery of personal professional identity through personal narration (orientation and professional autobiography).

In particular, science and mathematics teachers gave life to complementary recitals where the logical-mathematical paradigm was interwoven with the narrative one. In this case, digital telling had a function of cognitive support, exploiting incisive strategies in both the perceptive and the emotional aspects. The user was therefore activated on the cognitive level, in relation to the disciplinary contents. The definition of a connection among point of view (The Gift of your Voice), emotional baggage (Emotional Content), personalisation of the story (Voice modulation) and balancing of the dosage of information (Economy) on behalf of the subjects involved in the training permitted the digital storytelling potentialities to be explored in professional practises by educators.

The attitude towards the pre-existing knowledge creates similar dynamics, in which awareness is both “active” and “reflective”. Each “learning” story develops through different expressions of imagining life, including identity, affectivity, educational relationship, training programmes and cultural devices. Particular attention has been dedicated to the analysis of these last aspects—cultural devices—as facilitators of processes of development and transformation of individual and collective minds, and the definition of their nature.

The work with digital stories lets the ordinary flux of routine stop, giving the opportunity to wonder about it, and give an orientation to it, getting involved in the processes in which one acts, in other words the teaching/learning processes.

In the construction of digital stories, the training process becomes complex, interdependent, with new and diverse actors and competences: the teacher is engaged in processes to build educational events where several instruments, relational and managing modalities are used.

The revolutionary impact that new digital technologies have on learning and educational activities and, more in general, on communication activities and activities of cognitive elaboration of reality, is related to the increased complexity of multimodal environments of learning and to the strong impact due to the strengthening of non-verbal communication.

3.2. Digital Storytelling as Autobiographic Shared Practice

Digital narration is an opportunity for teachers to rethink their domains in a critical manner and ward off forms of individual and hedonistic expressions, at the same time [14]. Moreover, it can be useful in preventing a critical educator—whose educational action, intentionally oriented, was based on rules socially built and shared—from experiencing a functional autobiographic practise [15]. In order to contrast exhibitionist narcissism in a society of pure spectacle, founded on the suggestive power of unlimited joy, a pedagogical intervention was set up to make common meanings circulate as its construction of sense was progressing, little by little.

Utilising Digital Storytelling for sharing has meant to build a pathway where the “participating” nature of the internet was embodied in the pre-existing formal educational systems. Its modification, because of its web nature, is more dialogical than monological. Without a doubt it is an aspect of determination: in a professional training programme for teachers, the use of dialogue has encouraged the acknowledgement of knowledge in future teachers. Therefore, the pedagogical value of sharing through multimodal technologies is confirmed: technologies that let the teachers build learning environments “dedicated” but not narrow-minded, where it was possible to realize a constant interaction with students, involving them in individual activities and group activities, monitoring the quality of learning processes and discussing openly in a constructivist perspective.

Thanks to the utilisation of new digital technologies, there is a new paradigm emerging in the interaction between teachers and learners, no longer based on strong spatial and temporal constraints but, instead, on auto-learning and the creation of learners’ communities, with students who learn by interacting without spatial or temporal constraints, loosening the limits through non-verbal languages.

Education of qualified teachers, both from the point of view of disciplinary competences and with respect to relational skills, has been at the centre of a reflective practise. It is oriented toward the recovery of the repository of experiences, through which teachers can contribute to a cognitive responsibility defining their educational experiences [16]. The basic premise, through digital telling, was to spot some prompts of reflective practice where the ability of “learning to learning” [17] was oriented toward the personal and professional experiences of the subjects involved in the learning process.

4. Discussion: Digital Storytelling as Incubator of Professional Identity

Nowadays the school is experiencing a situation of crisis, due to, above all, the change in the system of values of as people who neither see it as an instrument of socio-professional ascent nor as a source of realisation and profit. Under the impact of media, the perception teachers receive from young students is that they are increasingly disinterested and demotivated, contesting the role of educators, whose authority has faded. Teachers feel a sense of failure and therefore complain about their inability to interest their students.

It is to be pointed out that teachers—and mostly the older ones—do not find it simple to work with new technologies. Nor is it easy to get rid of the individualistic prejudice of the duality in the educational pattern and always carry out variations that become very tiring.

The autobiographic essence of Digital Storytelling allows the exploration of the individual and relational universe of the participants in the process. Actually, the perspective of a narrative methodology does not mean to “speak about themselves” and give priority to their private lives, but rather to organise their own stories, while modulating the double role of action and relation of the narrative practice. The socially built and shared use of Digital Storytelling is intended to reaffirm the fundamental role of experience in the process of learning, adapting operative times and modalities to a responsible and shared utilisation of new technologies, against an egocentric one. In this way, new technologies become relational, as devices operating within a knowledge network (private, social, historical and textual), interrelating knowledge and people and creating social links and a practical community.

The strong impact of audio-video media allows the creation of a disciplinary and multidisciplinary cultural scenario and the introduction of a methodology in the pedagogic environment closer to the affective, cognitive and learning style of the learning subjects, to fit the purpose of promoting both the activation of communicative, emotional and participating means, and the ability to deconstruct the symbolic structure, identifying conditioning, latent and implicit, and modify the view.

These instruments must be proposed in a critical interdisciplinary perspective, questioning the evolutions of representations and their supports (textual, visual, audio-and so on), training in their use and the cultural environments in which they develop and the forms of their diffusion, influencing the evolution of the individual, of the community memory and social politics.

5. Conclusions: On the Advantages of DST in Teacher Training

The revolutionary impact of the use of new technologies in the formal contexts of education should be traced to the concept of participation: a participatory culture where end-users become able to generate content and learn [18] (p. 257) how to use the different technologies. They are able to master the different codes, recombining old and new media in a converging logic to obtain new languages and new media contents, distributed by the users themselves [6,18] (p. 75). As far as this aspect of “remixability” is concerned, stories, ideas, images, knowledge and contents are re-mediated through the media writing, generating new forms of cultural expression [6] (p. 74), [18] (pp. 46–47).

In the proposed work, digital technologies had a role of helping the teacher explain the semantic nexus existing in the mental representations of the teachers to the subjects that were being related, with the help of the narrative instruments, as emerged in the debates in the classroom on the learning/teaching processes. Besides, the teachers in the pre-service course, during the construction of their stories, discovered in person the value of learning communities and cooperation. If they are used as channels to produce knowledge, then involvement is linked to the possibility of contributing to the development of the community.

The reflexions collected from the teachers involved through the stories, at the end of the session, showed the efficacy of a horizontal pattern of knowledge transmission, where participation, sharing and skill exchange become elements leading to the creation of a professional identity having its roots in the ethic of reciprocal responsibility among the participants. This has a positive impact on professional satisfaction, on the increase of emotional bonds among operators and on the reduction of burnout.

It seems that participation in a community can facilitate learning. In this context the teacher is no longer the sole holder of wisdom and knowledge but becomes the facilitator of a training process, therefore of learning, based on the principle of functional horizontality at the origin of a learning community, intended as a co-constructive space of the learning processes. Such types of communities, that can be defined “practical communities”, are supported by a conception of knowledge as a result of a process where the subjects share their experiences reciprocally [19] inside precise historical, anthropological, social, theoretical, cultural and relational frameworks. In our case, the personal question of professional identity is going through a series of other questions regarding not only the disciplinary pathway of theoretical learning, but also the ethical and social positioning of the profession and its declination in everyday activity.

The facilitation provided by the characteristics of the digital device (the perception of it as prominent and pleasant), fosters learning from experience, multidisciplinary approach, transversal skills, co-working attitude, exchange of opinions between author-user and auto-evaluation. The participants were led to get in touch with their personal perception of their professional identity in a very simple way. Through the elaboration activated by the narrative and co-narrative process they could reflect on the personal matrix of motivation and representations of the social role of the teacher.

This reflection appeared in all its complexity and never ended, and like a continuous exercise, it creates the background from which methodologies, techniques, approaches and professional ethic develop.

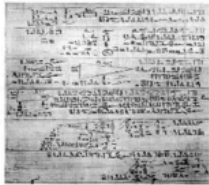

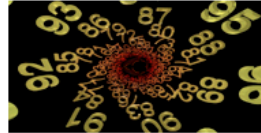
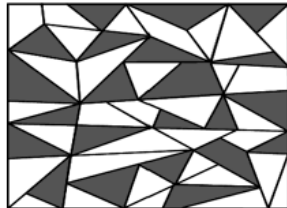
<p>Texts: language helps us to travel in the world of Mathemagic ... FORMULA has a meaning in mathematics and one in magic</p>		<p>Texts: let's give a look to the world of MATHEMAGIC, quoting a cult movie of Walt Disney DONALD DUCK IN THE WORLD OF MATHEMAGIC (1959)</p>
<p>Scene: 6 (Lucia)</p> <p>History of mathematic</p> 	<p>Scene: 7 (Lucia)</p> <p>History of mathematic</p> 	<p>Scene: 8 (Lucia)</p> <p>History of mathematic</p> <p>Pythagoras' sentence</p> 
<p>Texts: the papyrus of Rhind is completely mathematic. It contains various problems and riddles</p>	<p>Texts: the papyrus contains also the representation of the Pythagorean theorem. Even at the time of Ancient Greeks, numbers were at the base of thought to explain the phenomena of surrounding world.</p>	<p>Texts: mathematics is the alphabet with which God has written the universe.</p>
<p>Scene: 8 (Rita)</p> <p>Movie: Donald Duck greets Pythagoras who disappears AND ON ITS HAND REMAINS THE FIVE-POINTED STAR.</p>	<p>Scene: 9 (Rita)</p> <p>First magic trick THE HIDDEN STAR GAME OF LLOYD</p> 	
		<p>Texts: in the drawing there is a five-pointed star. In reality, the star is not hidden. It is under your eyes. Concentrate on the figure with an open mind ... and you will see it.</p>

Figure 1. Example, how to create a part of the storyboard template to realize digital story.

Conflicts of Interest: The author declares no conflict of interest.

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