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ABSTRACT

If educating is narrating (Demetrio, 2012), in order to give space to myth, dream, story, there is a need for words and narratives, memory and imagination (Cambi, Pinto Minerva, 2023), even at the time of the crisis of narration (Han, 2024) and faced with the granularity of contents in the age of fragmentation (Roncaglia, 2018). Multimedia and plurality of integrated languages (Rivoltella, 2012) are transforming the textual forms and supports through which we approach knowledge. In particular, digital storytelling, by manipulating multiple codes and formats of oral, written and visual narration, represents a way to promote media literacy and the development of transversal skills. The reflection will involve the students of the Teaching of Reading and Writing course of the Mediterranean University of Reggio Calabria, through a process of co-construction of operational proposals on narration and storytelling, on the implications of the neuroscience-artificial intelligence combination, on the possibilities and risks of their applications in the educational field.

Se educare è narrare (Demetrio, 2012), per poter dare spazio al mito, al sogno, al racconto, c'è bisogno di parole e narrazioni, memoria e immaginazione (Cambi, Pinto Minerva, 2023), anche al tempo della crisi della narrazione (Han, 2024) e di fronte alla granularità dei contenuti nell'età della frammentazione (Roncaglia, 2018). Multimedialità e pluralità di linguaggi integrati (Rivoltella, 2012) stanno trasformando le forme testuali e i supporti attraverso i quali ci avviciniamo al sapere. In particolare, il digital storytelling, manipolando più codici e formati della narrazione orale, scritta, visuale, rappresenta una modalità per promuovere la media literacy e lo sviluppo di competenze trasversali. La riflessione coinvolgerà gli studenti del corso di Didattica della lettura e della scrittura dell'Università Mediterranea di Reggio Calabria, attraverso un processo di co-costruzione di proposte operative sulla narrazione e lo storytelling, sulle implicazioni del binomio neuroscienze-intelligenza artificiale, sulle possibilità e i rischi delle loro applicazioni in campo didattico.

KEYWORDS

Narratives, emotions, Storytelling

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Introduction

*Through the narrative we build, rebuild,
in a sense we even reinvent, our yesterday and our tomorrow.
Memory and imagination come together in this process (Bruner, 2002)*

As Bruner (1996) reminds us, «only narration can build an identity and find a place in one's own culture», allowing human beings to know and interpret their own life experience, through processes of elaboration, interpretation and re-enactment of significant experiences - from the sensory, emotional and relational point of view - in line with the "autobiographical memory" (Annacontini, Vaccarelli, Zizioli, 2022). Martha Nussbaum assigns a privileged role to literature because it stimulates the potential of the imagination, which is necessary for a citizen of the world. She urges readers to question themselves and causes inner turmoil. Once closed the pages of a book, it is as if we were faced with a sense of bewilderment because what we have just read allows us to observe reality with different eyes, a reality now revealed and unexpected.

To handle moral interactions correctly, it is necessary to have a narrative imagination. Getting used to acting empathically and reflecting on the interiority of those we are facing contributes to the formation of a certain type of citizen and a certain form of community: a community that deepens and develops sympathetic sensitivity to the needs of others and understands how circumstances direct these needs (Nussbaum, 2012).

Calvino himself recognizes the cathartic value of the logical-fantastic narrative as it offers readers of all ages «a different encounter with reality, an enriched rereading of the acute, visionary and allegorical interpretation of an author who, despite the pessimism of intelligence, declares to glimpse in the optimism of the will the possibility of grasping and giving meaning to the senselessness of daily life» (Campagnaro, 2014).

Ricoeur's (1985) statement, "in the beginning is the story", reminds us that narration and stories have accompanied man since his origins, becoming the containers that give shape to his lived experiences. As in the case of Homeric poems, parables and fairy tales, primary orality and the subsequent methods of transmission of texts in oral form, based on the exclusive use of sound marked through the word, represent ancient forms of diffusion of knowledge. In this regard,

the general theory of primary orality (Havelock, 1986) highlights how telling stories has always been an effective way to build and communicate knowledge, culture, traditions and values: in an oral culture, knowledge, once acquired, it had to be constantly repeated, otherwise it would have been lost (Lorè, 2004).

Oral poetry in ancient times also played an educational function, since the texts it reported preserved and transmitted the entire cultural heritage of previous generations, namely a living oral encyclopaedia that facilitated and supported learning.

Daniel Taylor (1999) argues everyone is the product of the stories he has heard, lived and also of those he has not lived; daily they are told and told, and it is precisely in this relation that the negotiation of his own self with that of others takes place, in this sense the narrative can find its own validation as a tool and subject in the formative process for the construction of meanings.

Every person is a story that adds something new each day. Now with almost imperceptible adjustments, without ever changing anything of its composition; now, because of certain events and choices, instead bringing in it substantial and significant changes (Demetrio, 2012).

Bruner asserts that narration is used by men, as a culturally situated subject, as a primary cognitive and interpretive tool in relation to their own life experience. The narration can give meaning and meaning to the experience, providing frames not only of understanding but above all of anticipation or prefiguration: in this sense narration is an embracing gesture, an action that configures events according to a consequentiality.

1. Digital time narration: speed, estimation, and fragmentation.

In this age where digital and social media are prominent, even reading is affected by dynamics like speed, superficiality, and fragmentation. The culture of listening and reading is giving way to that of the image and to non-alphabetic codes, especially visual, which now provide all the necessary information for which reading is often boring and useless. Not only that! Symptom of a sudden process of change is the evolution of the same social: if Messenger and Facebook put at the centre of the word and writing as a form of exchange and communication between individuals, today photos and videos prevail over the text, as testified by TikTok and Instagram: the new prevailing language is the iconographic one, able to put to the centre the aesthetics and the instantaneity like values of reference of the society.

The Stories, the posts and the videos published on social only for a few hours, and then disappear, without traces or almost, seem to convey other needs and intentions on the part of the kids, more related to offering others a beautiful image of themselves, happy or temporary, partial, enigmatic and difficult to decode if you do not already have the codes to decrypt it (Lancini, Cirillo, 2022).

They are called "stories" but, in reality, they are not stories in the proper sense, they have no narrative duration: there is no memory, but it is simply information that replaces other information, in line with digital instant communication, working according to the rule of addition and not of narration (Han, 2024).

Memory is a narrative practice that connects events in an ever new way and establishes a network of relationships. The narrative's interiority is destroyed by the tsunami of information. The de-narrativized memory resembles the «workshop of a junk dealer», a «deposit filled to the brim with all possible images, completely disordered, badly preserved and worn out symbols» (Virilio, 2000; Han, 2024).

The digital society is becoming more and more characterized by image society, social window dressing, and appearing rather than being, resulting in young people building their own identity and satisfying their desire for esteem (Tisseron, 2013) while also seeking consensus and appreciation from others (Rivoltella, 2015). The key word is to live in the spotlight, preferring the public sphere rather than the private one, the incessant search for followers and likes, just in line with what is called Like addiction or digital narcissism. In the *Onlife* era (Floridi, 2017), communication is increasingly centred around visual language, and the view appears to be the dominant sense in relation to reality (Han, 2014; 2015). What prevails today is not only the "looking at others" but the "being looked at by others", in an era founded on the cult of self-image, strongly individualistic and narcissistic (Zona, 2015) which prefers the sharing and connection of the virtual world rather than the "real" socialization. The WEB is becoming a media platform where reality is more spectacular (Debord, 1967; Isidori, 2015; Migliati, 2008; Codeluppi, 2021). According to Han (2024), we don't tell each other any stories. That's why we communicate excessively. We post, we share, we like. The ritual contemplation that gives space to the content of the collective consciousness is the step to the intoxication of communication and information». Rivoltella (2020) asserts that fast times, which are useful for activating quick thoughts and immediate decision-making, are not useful for activating the internal processes necessary for reading. Among the skills that could be acquired through narrative orientation, we can include the ability to:

- create a structure for the chaotic reality we inhabit;
- give meaning and meaning to what happens to us and what we do;
- take other points of view;
- organise thinking and action;
- to predict the future and to plan;
- solving problems (Batini, 2018).

In line with the culture of immediacy, neuroscience believes that there is the possibility of a lack of development or a weakening of communication-relational skills, precisely because digital culture is based on instantaneity, on speed and information overload. Understanding and memorization could also be affected by screen reading, as well as the convergence of more information and less time to process it. This process is typical of the so-called "grasshopper mind", that is in the attitude, widespread in the contemporary world, of "jumping" intermittently, from one information to another, in a spasmodic way, with the consequence of not fixing any concept. The speed and volatility of information causes the brain to concentrate less and less, leading to a discontinuous knowledge base. And yet, in the digital age terms such as granularity and fragmentation are widespread: at the expense of length and complexity, digital content is characterized by instantaneity and simplicity. Granularity, in fact, «seems to increase the difficulties of managing the information overload, with the effect not of increasing but of significantly reducing the usefulness of the information received» (Roncaglia, 2018). The practice of Cut and Paste flattens the contents within an eternal present (Revolver, 2015), by copying and pasting, disassembling, and dividing the information. Yet, according to Morin, the "fragmentation of knowledge" simply generates a *"full head"*, in which «*knowledge is accumulated, piled up, and does not have a principle of selection and organization that gives it meaning*» (Morin, 2000). In this regard, Roncaglia (2018) argues that «it is necessary to work so that the new generations are protagonists in the transition, also in the network and in the digital ecosystem, from fragmentation to the reconquest of complexity». Hence the need to recover the value of slowness, not only relative to reading but more generally to the meaning of life in late modernity. The space and the pleasure of reading can welcome this slowness, understood as the possibility of deepening of ourselves, of our emotions, of our senses to enjoy what surrounds us, to be able to give importance to the real things and enjoy the joy of the little things. It is indeed necessary to "waste time" to "give ourselves time" (Trisciuzzi, 2018).

2. Storytelling and digital storytelling

The appropriation of knowledge, in the complex society, occurs through multiple media now transformed by the characters of multimedia and the plurality of languages (Rivoltella, 2012). In textual forms the paper medium gives way to the digital one, favoring the interaction with the reader approaches based on a temporal and not spatial logic and involving not only the sight but also the hearing and the tactile dimension.

Storytelling, using tools that promote experience, observation and the process of literacy, is extremely valuable as a resource for education and training, through the construction of educational activities based on stimulating narrative paths. Through the narration it is possible to create an atmosphere of active listening, fully involving the student, as the protagonist of the narration.

The digital version, the digital storytelling, allows you to build storytelling in a way closer to the languages of the new generations, through digital tools and using multimedia elements such as video, audio, images, texts. In digital storytelling the student has the opportunity to play a dual role: protagonist of the story and author of the same; this allows the acquisition of multiple skills - alphabetical, technological, critical and participatory - the enhancement of expressive, communicative and technological skills, motivation to learning. Digital storytelling also promotes media literacy - through the manipulation of multiple codes and formats of oral, written, visual narration - and contributes to the acquisition of two pivotal elements on which digital citizenship can be built today, that is, critical thinking and responsibility (Rivoltella, 2019); thanks to its transversal nature, therefore, it represents a complementary tool to teaching, also through the application to different disciplinary areas. Publication (the act of making one's thoughts public) no longer depends on subjective conditions (authorship, having things to say) but on the technical availability of access. "Being authors", in Mediapolis, is no longer a reason for election or merit (Rivoltella, 2020). The transition from a "communication from above" and mainstream, one to many in which the control of the circulation of content, to a "communication from below", in the perspective of collective intelligence (Levy, 1994), involves a democratization of the system but, at the same time, the multiplication of points of view determines a progressive pluralism of the network (Rivoltella, 2015). It is necessary, therefore, to be teach to media (Jenkins, 2014) is able to transform us from simple users to creators, and play the double role of prosumers, hovering between producer and consumer, producer and consumer of multimedia content.

3. Which image for the era of *Technium*?

If it is true that between body and mind there is an unavoidable continuity, we must ask ourselves what is the image and image of the body that the mind, neuro-technologically understood, can imagine itself in the age of technology. And it is necessary, moreover, to understand how this image, new and frightening, so that cybernetics, can be presided over by education and training so that a governability of the *Technium* is still possible (Cambi, Pinto Minerva, 2023). Again: it is necessary to ask ourselves which image is appropriate to convey in the didactic processes so that a symbiotic is not educated, as a being in which the organism and the cold structure of silicon are confused (Longo, 2001), a new trans-human man, an experimental subject, which forgets, in a sort of new Manichaeism, its biological nature and looks to itself by abandoning the vulnerable and perishable matter of flesh and blood, intellectually and perceptively limited and limiting and taking the cyborg paradigm to its own model. The demand, entirely pedagogical, of a necessary control of this drift, passes precisely from a new sensualisation (Cambi, Pinto Minerva, 2023) of the body and its perceptive, sensory nature, atrophied by the dematerialization of the virtual. The history of contemporary art offers the image of a new body, enhanced by artificial grafts and threatened by a remote-control mechanism of the Other. These new bodies, hyperbolic experiences of the body and the image of man, however, manage to create a new artistic and aesthetic awareness. Precisely art, in this impossible combination, manages to arouse a new revolution that insists on creativity and imagination, persevering in the possibilities of an interconnected body, contaminated and explored. Precisely this vital impulse informs the pedagogical reflection of the need to look at images in spite of everything (Didi-Huberman, 2005).

Technium images are images of reality. We usually think of images as symbols, semiotically political, totalitarian snapshots of a single reality. Indeed, what images, even in teaching practice must be guaranteed is their power to invest the reader, the viewer, who is also the interpreter, never unique, in the meaning of the image itself. Our traditional language is not weakened, even eliminated from the image, it is rather questioned, put into play. The strangeness of the image, the fantasy of the images of the child forces our language to reconstitute itself from time to time, to redefine itself, forcing thought to build new categories. The image, even the most frightening, does not cause the annihilation of knowledge, at the moment when it brings down our conceptual and interpretation categories, but delivers to man, the child, the teacher and the parent the possibility of a new knowledge, imaginative, hermeneutically inclusive, which is the expression of a new anthropological, historical and even political dimension.

The image, and for our types, the digital image is a revolution. Think about all the creative and growth mechanisms that silent books can activate even in children who have not yet learned to read and write, still determining a process of interpretation of reality, never right or wrong, as simply as possible.

4. Experiences and practicability for future teachers

Within the degree course of Primary Education Sciences of the Mediterranean University of Reggio Calabria for the course of Teaching of reading and writing was organized a real laboratory to understand - if and how - the potential of the story, of reading and writing, in the teaching practices of future teachers and future teachers suffer, and in what way, the evolution of languages, from textual to iconic, as described by the culture of immediacy (cf. par. 2).

It is precisely the effective action of teachers and teachers and visible learning (Hattie, 2016), in the dynamics of mediation (Damiano, 2016), that proposes the prosthetization of the written or narrated word, with didactic mediators, devices that de-naturation and metaphorization, from reality to signs, determine the visible passage from the direct experience of reality and the object of the learning-teaching process, to a hidden experience, almost, if you will, virtualized, the object of knowledge and learning.

The reference question of the research-action, conducted within the course itself, wanted to put together the self-construction of teaching actions and artifacts by students, through, the Rodarian suggestions, ways to invent stories and "the tricks I discovered or thought I could discover to move words and images" (Rodari, 1973) and the need to mediate, albeit through the use of digital technologies, content and knowledge, objectives and proposals of the narrative, with the aim of verifying whether the work of metaphorization, as a good didactic practice, is, in the age of on-life a virtual iconicity is unavoidably necessary or whether this is still perfectly adequate a grammar of fantasy.

Students were asked to design a lesson, build a digital or physical artifact, and describe the underlying teaching action. In group or individually, each proposal freely determined, preferred to attach the presentation to a narrative, read or represented, through the suggestions of Rodari. The stories have always taken their start from an educational emergency of current events and textual analysis of the occurrences of the individual narratives, realized through the software MAXQDA, a program designed for qualitative and mixed methods data assisted by computers, textual and multimedia analysis in academic and scientific institutions, represented in the Wordcloud below (fig.1), highlighted how within the 10 productions of the

students, the most recurring words were *mom, see, home, want, grandfather, small.*



Fig. 1 Wordcloud of word occurrences

This first data invites two important reflections: the first, the six most recurring words highlight how there is an affective-relational dynamic, in the representations of students, whose narratives are always linked to more or less protective family affections, within which the concerns of children, to whom the stories themselves are dedicated, can be resolved or at least found expression; the second, the second most used lemma is to see. This occurrence warns against the absolute demonization of digital storytelling, when this offers the student the possibility of that first and second degree metaphorization that passes through the didactic mediators of direct experience and images. Furthermore, the frequency of this word indicates how both in the process of traditional narration and in the process of digital narration, the multi-sensory connection for the first and multimedia for the second insist determinedly on the active participation of the listener. For this purpose, the absolute and 9 relative frequencies of the 6 chosen terms and the analysis of the two graphs (fig. 2 – absolute frequencies; fig.3 – relative frequencies) were highlighted.

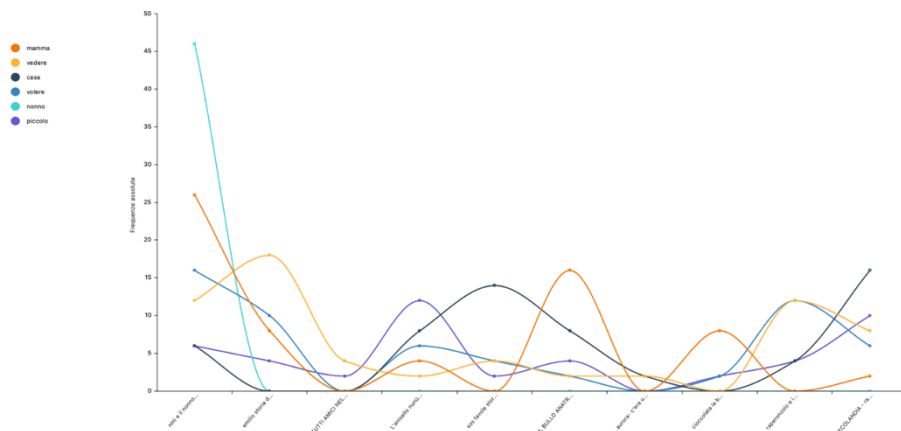


Fig. 2. Absolute frequencies

It can be noted that the vector see always maintains an average trend, with higher frequency peaks in some stories, compared to other lemmas that have a trend much more fluctuating and often close to the zero line.

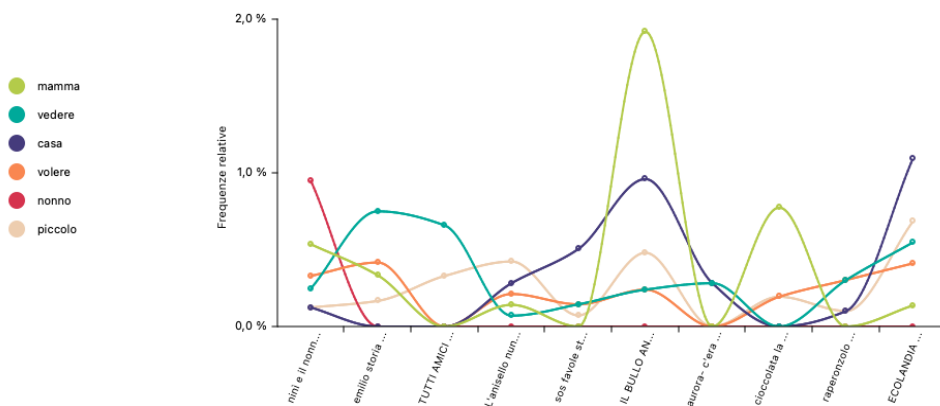


Fig. 3. Relative frequencies

Conclusions

Far from an exhaustive analysis of the data emerged from the research, these graphs of occurrences give reason to the statement that every educational action is a narrative (Demetrio, 2012) and, moreover, show how, through the strong frequency of the lemma see, present and in occurrence alternates in 9 of the 10

productions, in the representations of future teachers and future teachers, the visual coupling, in the qualitative analysis conducted, linked to the whole paradigm of the visible, represents a fundamental trigger for the success of educational design and educational relapse of the narrative experience.

Even more obvious, if you look at the occurrences of the other 5 words, is the deep link between the narrative and the world of emotions and family affectivities. The most frequent word in the productions of the students is *mammae*, with it, a whole family lexicon, which recalls the safe places of the house and the significantly important kinship.

If, on the one hand, the narrations take with force a new code, which makes use of the image and its strength to represent a more inclusive and immersive language for the educational experience, on the other the narration cannot fail to be, even when it turns into digital, a first and primordial device, original, useful to mean - again and always - reality. Every story is by nature epic. Each narrative, from the simplest, has been quickly referred to the value of silent books, to the most complex, think of the classical tragedy, is a way to reveal a shared sense and shared, even through the presence of images, of human experience.

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