

# There's story coming: the reconfiguration of storytelling experiences in children's e-picturebooks

DOI: 10.1590/1809-5844201839

**Ana Carolina Medeiros Caldas<sup>1</sup>**

<https://orcid.org/0000-0002-5016-8528>

**Ed Porto Bezerra<sup>2</sup>**

<https://orcid.org/0000-0003-4772-9870>

<sup>1</sup>(Universidade Federal da Paraíba, Centro de Ciências Humanas, Letras e Artes, Programa de Pós-Graduação em Comunicação. João Pessoa – PB, Brasil).

<sup>2</sup>(Universidade Federal da Paraíba, Centro de Informática, Programa de Pós-Graduação em Computação, Comunicação e Artes. Universidade Federal da Paraíba, Centro de Ciências Humanas, Letras e Artes, Programa de Pós-Graduação em Comunicação. João Pessoa – PB, Brasil).

## Abstract

This article aims to investigate new ways of reading and telling children stories from the different formats of media and experiences provided by the dissemination of mobile devices such as tablets and smartphones. As a basis for these reconfigurations, it is intended to apply theories of both audiovisual media cultures and new technologies, as well as the electronic and child literature, specifically the children's picture book. Digital-storytelling concepts, e-picturebooks, remediation, among others, are intended to launch a scientific-investigative look at the award-winning works of the Bologna Ragazzi Digital Award and the Jabuti Prize in the Digital Infantile category in the years 2016 and 2017, totaling four titles listed as object of this research.

**Keywords:** digital storytelling. children's picture book. e-picturebooks. new media. remediation.

## Introduction

Illustrated books, as they are known today, have a rather recent trajectory, but the habit of telling stories through images dates from immemorial time. From the beginnings of humanity, images and even visual narratives used to be engraved on the walls of prehistoric caves, with objectives ranging from the magical rituals of certain civilizations to the communication of practical life. Painters and hunters of the Paleolithic believed to possess an object by possessing their image, they considered “to acquire power over the object by means of its representation” (HAUSER, 1972, p.16).

The image, therefore, is of fundamental relevance in human life since long before there was a code system used to represent verbal communication. Although disseminated and widespread throughout the history of civilization, the image encompasses signs and meanings that only attentive and careful looks can extract, because of their plural and polysemic character that often goes unnoticed under our enchanted eyes.

We live increasingly in a culture in which the image has also become virtual, altering our habits and perceptions and establishing itself as mediator of all transmitted knowledge. The digital age, in this way, has ingrained in its fabric the requirement of a symbolic and pictorial instruction of signs and symbols (SALISBURY; STYLES, 2013), which induces a visual literacy, thus encompassing a basic system for understanding the images and their meanings. As Dondis (1991, p.10 – Our translation) warns, “we can no longer maintain a position of ignorance of the subject”, adding Oliveira (2008, p.29 – Our translation), “visual literacy would provide the child with not only a better reading, but also value to the importance and beauty of the letters”, highlighting what is magic and discovery in each work and incorporating it into the universe of children.

In this way, illustrated books, especially the children's books, constitute a media that presents illustrations full of meanings, adding and incorporating different senses. The insertion of varied elements in the narrative, through the visual character of illustrated works, corroborates the function of this artistic form and training critical citizens in an increasingly imaginative society.

With the advancement of what we may call the digital age, characteristic of the 21<sup>st</sup> century, the power of digits has become indispensable to deal with information, whether they are sound, image, text or software, choosing this universal language that emerges as a species of “esperanto of the machines” (SANTAELLA, 2004, p.83 – Our translation). In this context, combining multimedia as a support and hypermedia as a language (SANTAELLA, 2004) of the digital age, children's picture books were not left behind, migrating with all their visual and playfulness for their reconfiguration through e-picturebooks, providing multiple ways of reading and telling stories, as is the case with digital storytelling. The consequences of these recent changes in the ways of producing, designing, marketing and consuming editorial products have given rise to a reader profile of the digital medium, defined by Mestre (2017) as reader 2.0, or reader of the new digital forms.

Therefore, contributing to the development of the studies about the children's digital illustrated book and the various ways of telling and reading stories in cyberculture, an investigation of the concept of illustrated books was made from authors of the category (LINDEN, 2011; NIKOLAJEVA; SCOTT, 2011; SALISBURY; STYLES, 2013), and also theories related to this editorial product, called picturebook theory. Thus, the incorporation of different formats and media and the possibilities introduced by the new media have repercussion until its presence in some of the biggest national and world events related to the publishing branch and children's literature: the *Prêmio Jabuti* in Brazil, and the Bologna Children's Book Fair in Italy.

In this way, two winning works (between winners and finalists) of each event, in the years 2016 and 2017, were selected to analyze and exemplify the phenomenon to be researched, namely: *Pequenos grandes contos de verdade* (2016), from Editora Caixote;

Kidsbook Itaú Criança (2017), from Agência África; Wuwu & Co. - A Magical Picture Book (2016), from Step in Books; and, finally, Toontastic 3D (2017) by Google.

The present article intends to investigate how the productions of children's digital illustrated books, or e-picturebooks, have made use of resources of the digital and interactive media to allow experiences in the ways of reading and telling histories, aiming at the characterization of digital storytelling as a possible tendency towards which the media remedy, from the classic children's illustrated works, points out. For this, we used qualitative, exploratory, explanatory and bibliographic research to support the considerations from which deeper data were extracted from the experience.

### **Origins of children's illustrated book**

In the classic of children's literature, Alice in Wonderland (CARROLL; GARDNER, 2002), the main character is dissatisfied with the lack of images and dialogues in a book and claims, insulted, that a book with only words does not fit much, unlike the figures and dialogues that enrich the work. The illustrations that Alice desires are exactly the odd element that make up the illustrated works and that characterize them peculiarly in relation to other formats of publications.

From a semiotic conceptualization, the illustrated book can be defined as an art form that combines two levels of communication (verbal and visual), expressing its contents through iconic and conventional signs (NIKOLAJEVA; SCOTT, 2011). Unlike the linearity provided by the reading of conventional signs through words, the iconic signs, represented by the figures, do not present predetermined instructions on how to interpret them, giving rise to what the authors Nikolajeva and Scott (2011) call "tension" between the two communicative dimensions: verbal and visual. This tension is what characterizes the interactive possibilities between words and images in picture books and what, in turn, can create a scenario conducive to the potential of new media.

The history of the illustrated book comes from a broader approach to this type of literature, and can consider its origins from the telling of cave-wall stories, which can date up to 60.000 years ago in Europe (SALISBURY; STYLES, 2013). The earliest illustrated book to be recorded would be an Egyptian papyrus from about 1980 BC, which would have images and words inscribed through wood, leaves, skins and materials prior to the paper. From Bland's (1951) studies on the origins and evolution of illustrated books, however, the Chinese ideogram would still be the best representation of the first relations between text and illustration recorded (BLAND, 1951).

The codex (codex) and the volume (scroll) were the first formats of books that were proposed to have texts. The illustrated book, due to its intrinsic characteristic of predominance of images in detriment of the verbal codes, however, had a differentiated evolution of the written books, passing through transformations in its pictorial, functional

and status representation (LINDEN, 2011). For Salisbury and Styles (2013), the painter and poet William Blake was one of the first authors to combine words and images in his works, such as the book *Songs of Innocence* (1789), of singular visual style.

One of the techniques that made possible the first experiments in the composition of pages with characters and figures was the woodcut<sup>1</sup> that, until the end of the 18th century, was responsible for giving rise to the first illustrated works for children, such as the illustrated book *Orbis Sensualium Pictus (The Invisible World, 1658)*, by Comenius (LINDEN, 2011), representing the use of illustration in reading as a way of attracting children's interest.

Several genres of illustration have been created from techniques developed over the centuries. In addition to the woodcut, Linden (2011) also cites the intaglio<sup>2</sup>, which gave rise to more precise and less coarse features, the wood engraving printmaking<sup>3</sup> and lithography<sup>4</sup>. In this way, the "development of the printing procedures allows that works combining typographic characters and images on the same page multiply" (LINDEN, 2011, p.13).

However, the beginning of the consolidation of the illustrated children's book genre only began to take effect in the twentieth century, with the predominance of images at the expense of the texts present in the works, giving rise to colored illustrations that almost occupied the page (ESTEFANI, 2017b). Thus, it was in 1919 that the first major destabilization occurred in the predominance of the text on the image, after Edy-Legrand's publication *Macao et Cosmage*. Then, in 1931, Jean de Brunhoff published *The story of Babar, the little elephant*, which takes the image-text relationship to levels never before explored (LINDEN, 2011). Nevertheless, it is from Maurice Sendak, with his work *Where the wild things are* (1963), that an innovative conception of image happens to represent the infantile unconscious, proposing the tuning between text-image, being born the illustrated book infantile contemporary.

### **New technologies of reading and creation: the iPad as support**

According to recent research carried out by the American institution Common Sense Media<sup>5</sup>, in the year 2017, approximately 98% of children under the age of eight consumed audiovisual content through smartphones and tablets, including those with television device at home. The report also points out that these numbers have been increasing dramatically in recent years, as in 2011 the average number of children with these practices was 52%, while in 2013, it was already 75%<sup>6</sup>. The study reveals the American reality, but, as pointed out by surveys conducted by AVG Technologies, also with Brazilian children, it is possible to state

---

1 Wood engraving.

2 Engraving made with chisel or acid on copper plate.

3 Relief engraving technique made on board that allows to record with precision.

4 Printing that allows you to draw directly on the stone.

5 Nonprofit organization from San Francisco, California, that promotes access to the democratization of culture.

6 Available at: [https://www.commonsensemedia.org/sites/default/files/uploads/research/csm\\_zerotoeight\\_fullreport\\_release\\_2.pdf](https://www.commonsensemedia.org/sites/default/files/uploads/research/csm_zerotoeight_fullreport_release_2.pdf). Accessed on: 30 oct. 2017.

that 76% of those between three and five years already know how to connect a computer or tablet, 42% smartphone and 73% play online<sup>7</sup>.

The development of technologies conducive to the emergence of the first digital reading experiences began around the 1930s, starting with the April 1935 issue of *Everyday Science and Mechanics*. In the publication, we see the illustration of a reader who reads “a book designed and expanded on a screen manipulated by an electromechanical control that turns the pages and controls the focus” (FLATSCHART, 2014, p.3). But it was in 1945, from the creation of the project called MEMEX (Memory Extender), that Vannevar Bush launched in the history the first idea of what would be an analog multimedia computer, in which it would be possible to “create, edit and interconnect contents of text, sound and images, associating them in tracks and blocks of information” (FLATSCHART, 2014, p.44).

In 1971, the idea of digitalization and entry into cyberspace (LÉVY, 1999) became the Project Gutenberg<sup>8</sup>, in which the American Michael Hart “began to archive works in digital format and distribute them free of charge to the public” (ALMEIDA, 2015, p.30). The project is considered the oldest free digital e-book library in the world, providing more than 46.000 digital works in several formats today (ALMEIDA, 2015). The first models of reading support, however, were only developed after 1998, in Silicon Valley, United States. Rocket ebooks and Softbook Press, in addition to the Cybook, launched in 2001 by the French group *Cytalle*. However, it was through the Kindle device, launched in 2007 by Amazon, that the first revolution of mobile reading devices occurred and gave rise to the formation of a consistent market (PEREIRA, 2014).

As Flatschart (2014, p.55) points out, the children’s book market explores “interactive resources based on strategies such as storytelling, transmedia and gamification”, seeking to “give life to the content and provide sensory experiences for the reader.” Launched in 2010, Apple’s iPad has led to an exponential growth in sales of multimedia-driven devices because it “fell in consumer tastes and sold 14.8 million units in 2010 alone, five times more than designed by Apple” (PEREIRA, 2014, p.50).

Through the use of interactive features with content, such as sound, light and dynamism, as well as interactive illustrations, allowing the user an immersive experience with the work, the iPad “made it possible to create applications aimed at the storytelling experience known as book-apps” (ESTEFANI, 2017a, p.28). With wireless Internet technology, bluetooth, multi touch screen, and gyroscopes and accelerometers (determinants of the device position) - allowing access to own functions of a personal computer, but with the practicality and mobility of a smartphone - in addition to the installation of software applications, including e-readers, the iPad was responsible for its differential as a device (TEIXEIRA, 2015).

<sup>7</sup> Available at: <https://www.pertoo.com/blog/como-escolas-podem-ajudar-alunos-a-se-prepararem-para-usar-tecnologia/>. Accessed on: 30 oct. 2017.

<sup>8</sup> Available at: <https://www.gutenberg.org/>. Accessed on: 31 oct. 2017.

In this way, the devices carry their own characteristics that confer identity and allow diverse relations with the digital content in them, modifying social and cultural habits and behaviors, because “as the media changes, they also change bodies and brains; new media conditions foster new kinds of ontogenic adaptations and with them new possibilities for literary engagements” (HAYLES, 2009, p.127). It is necessary to observe, in this sense, the importance that the critical readership of such devices confers on the various digital reading media. The trajectories now produce more and more entertainment for reading, rather than the initial productivity in which the first experiences of reader devices.

### **Electronic literature is not digital printed literature: theoretical-conceptual perspectives**

With the proliferation of digital environments provided by the expansion of the web from the 1990s, the scenario in which the literature is inscribed appears once again confused, this time, however, by the emergence of the electronic literature, as reinforces Hayles (2009, p.20 – Our translation):

Just as the history of printed literature is deeply tied to the evolution of book technology, which has been built on a crescent of technical innovations, the history of electronic literature intertwines with the evolution of digital computers as they have been reduced in size. [...] Is electronic literature really literature? [...] Is literary quality possible in the digital media or is the electronic literature inferior to the printed canon? What large-scale social and cultural changes are related to the diffusion of digital culture and what do they advertise for the future of writing?

Thus, in view of the questions presented by the author, a definition of the term was suggested by the Electronic Literature Organization (ELO), which would be: “Work with an important literary aspect that takes advantage of the capacities and contexts provided by an independent or networked computer” (HAYLES, 2009, p.21). The first recurrence of the term, however, was raised by Jay David Bolter in his paper *The Idea of Literature in the Electronic Medium*, published in 1985. In it, Bolter (1985 apud MESTRE, 2017, p.117 – Our translation) conceptualizes the electronic literature through the “interactive participation of the reader”, suggesting “the possibility of building a version of the Odyssey for children whose main objective would be to require the reader an effort to solve the problems proposed by the narrative”. This proposition approached the use of gamification<sup>9</sup> within the narrative, in addition to enabling the reader to change the course of history.

---

<sup>9</sup> Gamification is a phenomenon in which the characteristics of games, such as puzzles and challenges, are incorporated into other areas, such as work, study or even in digital storytelling (MAXWELL, 2014 apud ESTEFANI, 2017a).

Bolter, incorporating his visions in co-authorship with Grusin, in the *Remediation: understanding new media*, broadens the understanding of the dynamics of the media, emphasizing that they do nothing more than what their predecessors did, however, overcoming and renewing the already outdated media, a concept called remediation<sup>10</sup> (BOLTER; GRUSIN, 2000). Jenkins (2009), in turn, will define remediation as the search for the balance between innovation and tradition, with evolution as a goal. It would be possible, from these definitions, to establish that digital literature, through interactive digital narrative, allied to the introduction of different media, facilitates access already proposed by the previous media, offering, with digital materiality, possible dimensions for aesthetics and creation (MESTRE, 2017), enabling unique experiences for the user/reader.

Hayles (2009), however, points to the disadvantages that the theoretical assumptions developed from the context of printed literature can provide, for “electronic texts cannot simply be pushed into the same tent as printed texts without taking into account their different modes of functioning” (HAYLES, 2009, p.45 – Our translation). The author cites the work *Cybertext: Explorations of Ergodic Literature*<sup>11</sup>, published in 1997 by the researcher J. Aarseth, which proposes an unprecedented category of “digital literature”, pointing to the need for an unusual effort required by the work for the reader to scroll through the text.

Since we still do not have a watertight set of characteristics and properties that can allow a clear and objective classification of what is, in fact, the electronic literature or digital literature, we intend to continue the studies on remediation and investigations about the way in which this phenomenon interferes in contemporary literary productions, starting from the introduction of multimedia resources of interaction and participation of the reader/ user, providing and altering the process of storytelling in interactive digital narratives, mainly aimed at the children’s audience.

Finally, assuming the subjective character of electronic literature in the literary and new media fields, it is possible to categorize the digital literary work from the computational origins of its capacities and contexts, defining it from this perspective as construction digital born<sup>12</sup>, which would be the productions created and destined specifically for the digital environment (MESTRE, 2017).

10 The process by which one media seizes another, in which the functionalities of these media are recycled and adapted by the media that appear later.

11 Available at: [https://monoskop.org/images/e/e0/Aarseth\\_Espen\\_J\\_Cybertext\\_Perspectives\\_on\\_Ergodic\\_Literature.pdf](https://monoskop.org/images/e/e0/Aarseth_Espen_J_Cybertext_Perspectives_on_Ergodic_Literature.pdf). Accessed on: 31 oct. 2017.

12 “The concept *digital born* was created in 1993 by Randal Metz to refer to all materials created and originated in digital form” (MESTRE, 2017, p.100).

## Leaving the rabbit hole and touching the screen: e-picturebooks and their implications in the storytelling experience

In researches conducted in recent years, the authors Pinto, Zagalo and Coquet (2012) looked at the origins and supports of the e-picturebook, analyzing it as a genre of the digital book. Printed picture books would by themselves be objects of avant-garde character that can present non-linear narratives, intertextuality, diverse formats and attract different audiences (ANSTEY, 2008 apud PINTO; ZAGALO; COQUET, 2012), being categorized as specific artistic and literary forms. With the dissemination of new technologies and interactive environments in digital media, the picturebooks also reconfigured their narrative characteristics, profoundly altering the experiences of storytelling for the user, thus giving rise to the e-picturebooks.

The e-picturebooks are, usually, book-apps<sup>13</sup> which use images, sounds, and interactions, in which text results in a combination of different types of media. In addition, screen interaction multi touch is aligned with the development of the narrative and there is the use of characteristics of other media, such as cinema, animations and videogame (PINTO; ZAGALO; COQUET, 2012), collaborating with the emergence of storytelling experiences for children in digital media.

For Lovato and Waxman (2016), when a new media is introduced into history, it first tends to follow the same paths as previous media. An example of this would be the digitization of printed books, such as the digital library *International Children's Digital Library*<sup>14</sup>, which contains books from various parts of the world, scanned and with all the characteristics of the print preserved, just as it has happened with tablets e smartphones, since we have only reached the surface of its capabilities (LOVATO; WAXMAN, 2016).

However, the e-picturebooks present features, and promote differentiated ways of reading and interacting with the narrative that were previously not possible. For Yokota (2014), interactive digital picture books represent the most exciting innovation in children's literature that has not been for a long time, so the importance of investigating and analyzing the impacts of such publications on children's development and their relationship to understanding children's narratives.

Several researchers, in addition to Yokota (2014), Lovato and Waxman (2016), Pinto, Zagalo and Coquet (2012), are conducting researches to investigate how digital publications for children interfere with their experiences. One of them was Santos (2017), who carried out an interaction test with the 3rd grade elementary school of a municipal school in São Luís, Maranhão, in Brazil. The author pointed out that the technological potential of e-picturebooks brings a positive repercussion to the users' experience, attracting children to the search for book-apps and incorporating the habit of reading in their universes.

---

13 Book-app or enhanced book: book format that most closely relates to the making of the digital picture book or e-picturebook.

14 Available in <http://en.childrenslibrary.org/>. Accessed on: 01 nov. 2016.



Like all processes of technological evolution, the phenomenon of e-picturebooks occurred in stages, classified by Teixeira (2015), from Yokota (2014), in three moments. The first of them began in 2002, with the digitization and the availability of children's picture books in a digital environment, through initiatives such as the Project Gutenberg and the online library *International Children's Digital Library*, cited earlier in this paper. The second moment, in turn, had as main characteristic the transformation of children's picture books into a kind of animated films, creating a cinematographic bias to the work through the use of "narration accompanied by word enhancement, musical track related to the theme of book, zooms, panoramic vision, angles and differentiated cuts of images" (TEIXEIRA, 2015, p.46). Finally, from the first decade of the twenty-first century, illustrated books began to use the characteristics of the digital medium and to appropriate the qualities of this environment, such as: interactivity, dynamism, sound tracks and effects, personal narration, among other resources.

The digital storytelling usually provides a wide variety of experiences of entertainment and involvement with the story (MILLER, 2014), possible from the experiences provided by the technological and immersive resources present in this type of narrative. Thus, Estefani and Queiroz (2016) have listed, through the studies of researchers in the area, a proposal to characterize the children's book-apps, which addresses issues such as: multimedia; textual forms; interactivity; gamification; and content organization. Based on these categorizations and the criteria established by Yokota (2014) for the analysis of children's book-apps, as well as in the considerations of Teixeira (2015) and Estefani (2017a) on the e-picturebooks, some works were extracted from the awards of two major events of literature and children's book (*Prêmio Jabuti* and Bologna Children's Book Fair) to exemplify the theoretical framework that has so far this innovative way of creating, reading, telling and experiencing children's stories.

## Methodological procedures

The present research was based on a theoretical revision to define the methodological bases that guided the concepts presented until then. We can classify this research methodologically as qualitative, as nature; exploratory and explanatory, regarding the objectives; and bibliographical, regarding the operability. In qualitative research, quantity is replaced by deep immersion, reaching levels of understanding that cannot be achieved through quantitative research, since the "qualitative researcher will look for exemplary cases that may be revealing of the culture in which they are inserted" (GOLDENBERG, 2004, p.50).

In order to broaden the information about the present theme, the exploratory research was fundamental to the improvement of the elaboration of this work, from the perspective of Santaella (2001). With regard to methodological procedures, paper and digital sources were first used, followed by the analysis of the characteristics of children's digital books present in applications and sites listed.

## ***Prêmio Jabuti Infantil Digital and Bologna Ragazzi Digital Award: a proposal for the analysis of children's e-picturebooks***

The source of the examples found in this research comes from two of the biggest events related to children's books and literature in Brazil and in the world. The first one, the *Prêmio Jabuti*, was launched in 1959 and is known as the "Oscar" of Literature in Brazil, being the most traditional and old literary prize in the country<sup>15</sup>. The *Prêmio Jabuti* incorporated, from the year 2015 onwards, the category *Infantil Digital*, to include works with multimedia content, hypertextuals and interactives<sup>16</sup> in its awards. Already the Bologna Children's Book Fair<sup>17</sup>, one of the world's largest events promoting children's picture books, which has been taking place since 1963 in the Italian city of Bologna and awarding the best illustrated books in the world every year, created in 2012 the Bologna *Ragazzi Digital Award*, confirming the opening of markets to potential consumers of the digital age<sup>18</sup>. From the events above, four works were selected from among the winners and finalists that can illustrate the scenario of the e-picturebooks currently and point to categorizations of storytelling now also present in digital environments.

### **E-picturebooks at national level: analysis of the works of the *Prêmio Jabuti Infantil Digital***

At the national level, we have, first, *Pequenos grandes contos de verdade*, from Editora Caixote, winner of the *Prêmio Jabuti* 2016 in *Infantil Digital* category, and *Kidsbook Itaú Criança*, from Agência África, finalist of the *Prêmio Jabuti* 2017, also at the same category. From the use of multimedia resources present in the digital storytelling of the e-picturebooks here, the reader/user is invited to participate in dynamic (self-initializing) and sometimes interactive (conditional to action) illustrations, "radically altering the illustration in the context of book-apps, when compared to the illustration in the printed book" (ESTEFANI, 2017a, p.38 – Our translation). In the first e-picturebook, for example, we can cite the scene where the user/reader is conditioned to use touchscreen features to summon help and thus rescue the oil-contaminated penguin from offshore vessels. This action is stimulated by the presence of resources such as the interrogation of the penguin figure, suggesting the participation of the user/reader in the resolution of the narrative conflict (saving the penguins from the contamination by the oil), besides the speech balloons of the narrator that presents a balloon to guide the narrative enjoyment of the reader (Figure 1).

15 Available at: <http://cbl.org.br/imprensa/noticias/os-5-principais-premios-literarios-do-brasil>. Accessed on: 02 nov. 2017.

16 Available at: <http://www.publishnews.com.br/materias/2015/06/02/82166-jabuti-digital>. Accessed on: 02 nov. 2017.

17 Available at: <http://www.bookfair.bolognafiere.it/home/878.html>. Accessed on: 02 nov. 2017.

18 Available at: <http://www.publishnews.com.br/materias/2011/05/23/63472-o-livro-infantil-digital>. Accessed on: 02 nov. 2017.

**Figure 1** – User's/interactor's participation

Source: *Pequenos grandes contos de verdade* (book-app). Version 1.1. Editora Caixote, 2015.

In another subsequent scene, the user/interactor is invited to directly assist in cleaning the penguins, rubbing their finger against the screen, thus contributing to the narrative through the resources provided by the digital storytelling (MILLER, 2014; ESTEFANI, 2017a), within the criteria established by Yokota (2014) and Teixeira (2015). In order to deepen and expand the scope of the look in this analysis, the term interactor was used in the sense of agency, a concept that involves the willingness to participate and induces the reader/interactor to be called for the construction of the story, interacting with the narrative multimedia.

Through the presence of small blue circles in the scenes, it is possible to perceive the areas in which the interactor can act with the use of the multi touch resource, can rub your finger on the character and perform more than one input for action, ridding the penguin of the oil present in its feathers, as in the case of the scene of Figure 2.

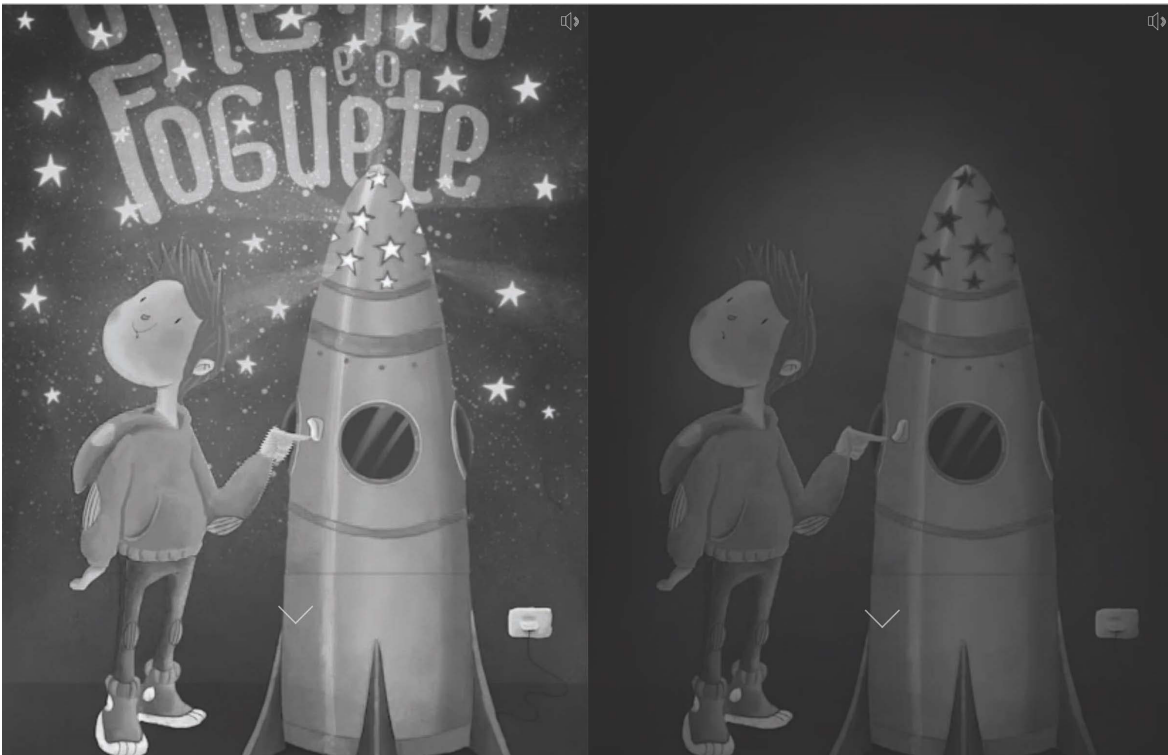
**Figure 2** – Touchscreen in digital storytelling



Source: *Pequenos grandes contos de verdade* (book-app). Version 1.1. Editora Caixote, 2015.

Already the collection *Kidsbook Itaú Criança*, from Agência África, it has very limited multimedia and interactive features as its contents are transmitted online, not through an application, as is the case with *Pequenos grandes contos de verdade* and other works analyzed. Through the project *Leia para uma criança, #issomudaomundo*, the company has made available on its website eight new children's works, produced by artists from various cultural backgrounds in Brazil, which can be accessed, without the need of downloading, through devices tablets or smartphones<sup>19</sup>. Having as main characteristic the initiative of distribution of the e-picturebooks on web, the narratives of the *Kidsbook Itaú Criança* shows features such as light/brightness that differ from the player's touch (Figure 3).

<sup>19</sup> Available at: <http://www.euleioparaumacrianca.com.br/>. Accessed on: 02 Nov. 2017.

**Figure 3** – Interactive lighting

Source: *Kidsbook Itaú Criança* (online collection), 2016. Available at: <http://www.euleioparaumacrianca.com.br/>. Accessed on: 06 nov. 2017.

The work consists of a collection of children’s picture books produced exclusively for reading on tablets and smartphones. Directed to the children, the literary works, present online, bring unpublished stories of Antonio Prata, Luís Fernando Veríssimo, Tulipa Ruiz, among other artists of the current Brazilian cultural scene, as well as exclusive soundtrack of singer Fernanda Takai for interactive videoclip of one of the works (*O Cabelo da Menina*<sup>20</sup>), available on the YouTube video platform, in which the interactor has the possibility to explore the immersive 360° environment.

Tracks and sound effects, short repetitive movements of objects on the scene, as well as indications of the direction of the reader’s gaze and the position of the device are also part of the resources of the enjoyment of the digital narrative. Each story features small areas with cell phone icons indicating user-reader movement, plus the phrase next to “tilt your cell phone” or the presence of verbal cues instructing the slide of the reading to the left, right, up or low (Figure 4).

20 Available at: <https://www.youtube.com/watch?v=k6L4EB-NzoY>. Accessed on: 26 Nov. 2017.

**Figure 4** – Indications of movement



Source: *Kidsbook Itaú Criança*. (online collection), 2016. Available at: <http://www.euleioparaumacrianca.com.br/>. Accessed on: 07 Nov. 2016.

### **E-picturebooks at international level: analysis of the works of the Bologna *Ragazzi* Digital Award**

The third e-picturebook to be analyzed is entitled *Wuwu & Co.*, from Step in Books, and was the winner in the category Fiction, from Bologna *Ragazzi* Digital Award 2016. The narrative presents its differential by incorporating challenges to the reader/user during the storytelling, inviting the reader to interact and participate in the resolution of situations proposed by five creatures facing the most rigorous winter in two thousand years. Through gyroscopes and accelerometers, the visual and interactive elements increase the user-reader interaction possibilities, providing an immersive experience with the work.

In the scene where one of the characters, Thit Maya, asks the reader to help bring down fruit from a giant tree - for it is covered by the most rigorous winter snow in two thousand years, besides Maya being with the four legs broken due to a fall that suffered, thus not being able to carry out effort - the interactor must move the device quickly in order to knock down the fruits, as if it were shaking the tree (Figure 5).

**Figure 5** – Accelerometers and gyroscopes

Source: Step in Books. *Wuwu & Co.*

The presence of augmented reality<sup>21</sup> and immersive virtual environments 360°<sup>22</sup> allow the organization of the multimedia content to be established in a different way from the organization of the textual content in the work, corroborating to one of the characteristics of the e-picturebook (ESTEFANI, 2017a) and contributing to the coherence of the work (TEIXEIRA, 2015; YOKOTA, 2014).

In one of the five creatures' stories, the character Everett, whose brothers sleep in the deepest sleep in cocoons at the height of a large tree, asks the reader-interactor help to awaken them and thereby save them from the oppressive cold they are passing through. To do this, the reader needs to shout at the loudest volume he can to make the brothers wake up (Figure 6, left).

Already in the scene that portrays the Storm and his family, who have a terrible fear of darkness, the reader needs to point the device's camera at some yellow object around them and thus illuminate the Storm family's lanterns to save them from the frightening dark (Figure 6, right).

21 The augmented reality (AR) can be defined as a technology that combines and unifies various information media and digital communication (audio, video, text, 3D images, among others), in order to complement the real-world objects (GOMES, 2016).

22 For Estefani (2017a), e-picturebooks' 360° immersive virtual environments are digital spaces that allow the exploration of visual, sonic and interactive elements of history, thanks to instruments known as gyroscopes and accelerometers present in tablet devices.

**Figure 6** – Immersive virtual environments 360°

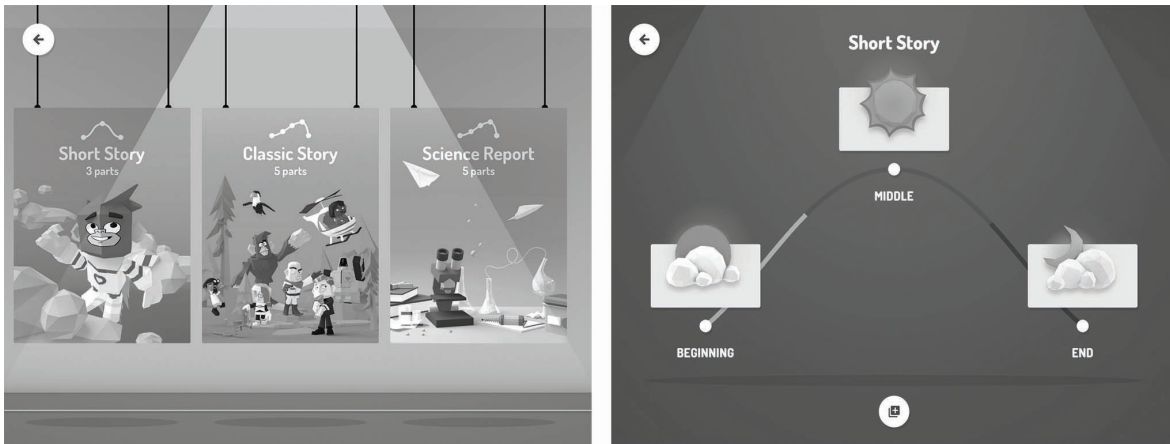


Source: Step in Books. Wuwu & Co.

Lastly, *Toontastic 3D*, from Google, book-app winner of the Bologna *Ragazzi Digital Award 2017*, presents an experience of digital storytelling more immersive and interactive because it allows the reader/user to construct their own 3D digital narrative and reproduce the animation created later, from the narration of their voice. In this application, the user is the director of his own story and responsible for the creation of characters, scenarios, scripts, animations and even the enjoyment of the narrative, being able to choose between scenarios and characters pre-established by the work, such as camps, abandoned ships, classrooms, space, in addition to pirate characters, explorers, ninjas, astronauts, monsters, mermaids, among others.

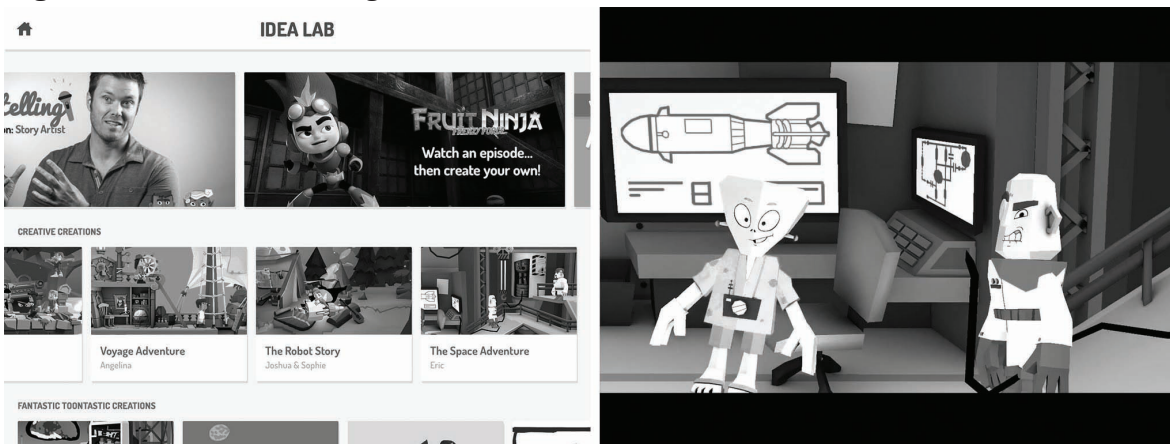
In this book-app, it is up to the user to choose between three profiles of stories, initially: short stories (three parts), classic stories (five parts) or reports of scientific experiments (five parts) (Figure 7, left). Soon after, the user has access to the subdivisions of his narrative, being composed by the stages that each of the three types of narratives presents. In addition, there is the possibility of creating non-linear narratives, since the reader is the author of their story and can choose whether or not to follow the sequential order of narrative components (Figure 7, right).



**Figure 7 – Creation of the storytelling**

Source: Google. *Toontastic 3D*. 2017.

The interactor can also design his own characters and scenarios in three dimensions, share his creations with other users of the application, and even follow the digital narratives of other readers, in the option *Idea Lab* (Figure 8, left), in which he can visualize the productions of other users of the application and thus be inspired to produce his own creations (Figure 8, right).

**Figure 8 – Idea Lab: sharing**

Source: Google. *Toontastic 3D*. 2017.

Therefore, *Toontastic 3D* represents an immersive experience for the user, own of the digital storytelling (MILLER, 2014), through the construction of collaborative e-picturebooks that provide sensations, are used to describe the history of orality, since they use the technological resources to give life to the imagination.

## Final considerations

The tendency of the development of new information and communication technologies leads to believe that, increasingly, old media are being influenced by new media and reconfiguring their formats, media, access and, above all, experiences. As described by Miller (2014), Disney was one of the first to experience the idea of immersive storytelling through his works, for he “[...] wanted parents and kids to be able to become a part of the stories he’d created — and Disneyland was a way to give them that experience” (MILLER, 2014, p.361). Therefore, more than watertight works, digital picturebooks or e-picturebooks become pleasurable experiences of contact with a nascent reality, attracting and stimulating children to the habit of reading and nurturing their creative ideas, bringing life to them.

In this way, the illustrated book, especially the children one, has been shown, from its first recurrences in the history of the humanity, like one of the narrative media potentially more interactional, since the purpose of them is to give greater significant character to the text that, for itself, does not present itself completely. Dynamic and interactive illustrations, coupled with the experiences of digital storytelling in the e-picturebooks, they rekindle the flame that united the text to the image, allowing different experiences and involvements with the story and inviting the reader-interactor to participate also in the narrative.

## References

- ALMEIDA, F. **O livro digital como processo hipermediático**: a reconfiguração dos papéis do leitor, autor e editor no contexto dos usos e práticas editoriais. 2015. 94f. Master’s Thesis (Master’s Degree in Communication) - Postgraduate Program in Communication, Universidade Federal da Paraíba, João Pessoa.
- BLAND, D. **The illustration of books**. Faber & Faber Ltd., 1951.
- BOLTER, J. D.; GRUSIN, R. **Remediation**: understanding new media. Cambridge: MIT Press, 2000.
- CARROLL, L.; GARDNER, M. **ALICE**. Commented edition. Rio de Janeiro: Jorge Zahar, 2002.
- DONDIS, D. **A sintaxe da linguagem visual**. São Paulo: Martins Fontes, 1991.
- ESTEFANI, T. **Storytelling em e-picturebooks e implicações cognitivas**. 2017a. 130f. Master’s Thesis (Master’s Degree in Arts, Culture and Languages) - Post-Graduate Program in Arts, Culture and Languages, Universidade Federal de Juiz de Fora, Minas Gerais.
- \_\_\_\_\_. Uma Análise Sobre Interatividade e Gamificação em Livros Ilustrados Digitais a Partir da Obra *Wuwu & Co*. In: XXII CONGRESSO DE CIÊNCIAS DA COMUNICAÇÃO NA REGIÃO SUDESTE, Rio de Janeiro, 2017b. **Anais...**
- ESTEFANI, T.; QUEIROZ, J. O livro infantil ilustrado torna-se digital: book-apps como artefatos cognitivos. In: XV ENCONTRO ABRALIC, Rio de Janeiro. 2016. **Anais...**
- FLATSCHART, F. **Livro digital, etc.**: descubra a nova forma de leitura que está mudando o mundo. Rio de Janeiro: Brasport, 2014.
- GOLDENBERG, M. **A arte de pesquisar**: como fazer pesquisa qualitativa em Ciências Sociais. Rio de Janeiro / São Paulo: Record, 2004.

- GOMES, C. M. C. **Ludismo, gamificação e Realidade Aumentada**: desenvolvimento de recursos educativos na área das expressões multimídia. 2016. 288f. Doctoral Dissertation (Doctorate) - Course of Media-Digital Art, Universidade do Algarve, Faro.
- HAUSER, A. **História social da literatura e da arte** - Tomo I. São Paulo: Mestre Joub, 1972.
- HAYLES, K. **Literatura eletrônica**: novos horizontes para o literário. São Paulo: Global: Fundação Universidade de Passo Fundo, 2009.
- JENKINS, H. **Cultura da Convergência**. 2. Ed. São Paulo: Aleph, 2009.
- LÉVY, P. **Cibercultura**. São Paulo: Ed. 34, 1999.
- LINDEN, S. V. **Para ler o livro ilustrado**. Tradução Dorothée de Bruchard. São Paulo: Cosac Naify, 2011.
- LOVATO, S.; WAXMAN, S. Young children learning from touch screens: taking a wider view. **Frontiers in Psychology**, v.7, article 1078, 2016.
- MILLER, C. H. **Digital storytelling**: a creator's guide to interactive entertainment. New York: Taylor e Francis, 2014.
- MESTRE, A. **Literatura 2.0**: para uma cartografia da narrativa digital. 2017. 496f. Doctoral Dissertation (PhD Thesis in Communication, Culture and Arts) – Faculdade de Ciências Humanas e Sociais, Universidade do Algarve, Portugal.
- NIKOLAJEVA, M; SCOTT, C. **Livro Ilustrado**: Palavras e Imagens. São Paulo: Cosac Naify, 2011.
- OLIVEIRA, R. **Pelos Jardins Boboli**: reflexões sobre a arte de ilustrar livros para crianças e jovens. Rio de Janeiro: Nova Fronteira, 2008.
- PEREIRA, M. **Design de comunicação e o livro digital**: Uma análise das ilustrações interativas de *Alice for the iPad*. 2014. 155f. Master's Thesis (Master's Degree in Media) - Postgraduate Program in Media Studies, Universidade Federal do Rio Grande do Norte, Natal.
- PINTO, A. L.; ZAGALO, N.; COQUET, E. **From a click to a gesture**: a contribution to defining the concept of children's e-picturebooks. In: 2ND INTERNATIONAL CONFERENCE ART, ILLUSTRATION AND VISUAL CULTURE IN INFANT AND PRIMARY EDUCATION - CREATIVE PROCESSES AND CHILDHOOD-ORIENTED CULTURAL DISCOURSES. Aveiro, Portugal: Universidade de Aveiro, v.1, p.223-228, 2012. **Anais...**
- SALISBURY, M.; STYLES, M. **Livro infantil ilustrado**: a arte da narrativa visual. Trad. Marcos Capano. 1ª ed. São Paulo: Rosari, 2013.
- SANTAELLA, L. **Comunicação e pesquisa**: projetos para mestrado e doutorado. São Paulo: Hacker Editores, 2001.
- \_\_\_\_\_. **Navegar no ciberespaço**: o perfil cognitivo do leitor imersivo. São Paulo: Paulus, 2004.
- SANTOS, D. **Mídias dinâmicas em book apps infantis**: a experiência do usuário infantil durante a prática de leitura. 2017. 174f. Master's Thesis (Master's Degree in Design) - Postgraduate Program in Design, Universidade Federal do Maranhão, São Luís.
- TEIXEIRA, D. J. **A interatividade e a narrativa no livro digital infantil**: proposição de uma matriz de análise. 2015. 204f. Master's Thesis (Master's Degree in Graphic Design and Expression), Universidade Federal de Santa Catarina, Florianópolis.
- YOKOTA, J.; TEALE, W. Picture books and the digital world: Educators making informed choices. **The Reading Teacher**, v.67 (8), p.577-585, 2014.

### **Ana Carolina Medeiros Caldas**

Bachelor in Communication in Digital Media from the Universidade Federal da Paraíba (2016). She is master student in Programa de Pós-Graduação em Comunicação of the Universidade Federal da Paraíba (PPGC/UFPB). She is a member of the Research Group GMID/UFPB (Grupo de Pesquisa em Processos e Linguagens Midiáticas) leadered by Post-Doctorate Professor Marcos Nicolau. Currently she researches, along with the Professor Advisor Marcos Nicolau, the reconfigurations of digital interactive children's picturebooks in cyberculture. She has experience in the fields of diagramming, graphic designer, illustration, digital photography and image editing. E-mail: carolmdcaldas@gmail.com.

### **Ed Porto Bezerra**

Bachelor in Data Processing Technology from the Universidade Federal da Paraíba (1985), master in Computer Science from the Universidade Federal da Paraíba (1989), PhD in Electrical Engineering from the Universidade Federal da Paraíba (2000), Post-doctorate in Communication from the Universidade Federal do Rio de Janeiro (2011) and Senior Stage from the College of Communication of University of Texas in Knight Center for Journalism in the Americas (2013). He is currently Full Professor of the Universidade Federal da Paraíba where he teaches in the courses of Computer Science, Computer Engineering; in the Programa de Pós-Graduação em Informática (PPGI), in the Programa de Pós-Graduação em Computação, Comunicação e Artes (PPGCCA), and in the Programa de Pós-Graduação em Comunicação (PPGC). He has experience in the field of Data Management, Database and Analysis and Design of Systems, working mainly on the following topics: applications for interactive digital TV, digital libraries, audiovisual media cultures, data visualization and distance education. E-mail: edporto@di.ufpb.br.

Received on: 01.20.2018

Accepted on: 11.12.2018

