

THE FUTURE OF THE READER OR THE READER OF THE FUTURE: CHILDREN'S INTERACTIVE PICTUREBOOK APPS AND MULTI-LITERACIES

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ABSTRACT:

This work explores the interactive book app for children as a form of literary expression that requires from the young reader the capacity to orchestrate various forms of literacy to promote their ability of reading critically multimodal, digital and interactive texts. Serafini's model for the analysis of picturebooks in three levels, perceptive, structural, and ideological (SERAFINI, 2010; 2015), is proposed as a didactic tool to promote these multiliteracies at school through the reading of picturebook apps.

KEYWORDS: picturebook apps; multiliteracies; multimodal literacy

Introduction

Imagining the future of reading and its encouragement amongst young readers, often we visualize a utopic future, in which all children and young people are surrounded by high-quality literary texts (mostly classics of Brazilian and universal literature), texts they devour with passion and that expand their knowledge and experience of the world, promoting sophisticated aesthetic experiences and at the same time developing their critical view of the world.

The reality, nevertheless, is quite different. Although improvements have taken place in the last decades, in Brazil the proportion of public libraries per capita is extremely low, bookshops are few and concentrated in some areas

and books are expensive. In most schools, literature is used instrumentally to teach literacy, while the pleasure of reading and the freedom to choose what to read are rarely contemplated. In terms of literacy learning, the focus is still on the written word. Even though on preschool level and first years of schooling picturebooks and comics are part of the curriculum, they are commonly thought with traditional pedagogical practices, which focus on the decoding and comprehension of the written text; little attention is given to the visual text and the complex relationships between text and image characteristic of these literary forms.

Out of school, nevertheless, children face a complex communicational landscape, in which television and the internet present the written text in constant and complex interplay with images, sounds, movement, gestures. The human communication has always been multimodal, but the written word was for a long time (and in many cases still is) privileged as the main language to be learned (KRESS; VAN LEEUWEN, 2006). What has changed is that, with digital technology, the protagonism of written language has been relativized in human communication, and other semiotic modes, especially the visual, have become more prevalent. (JEWITT, 2005; KRESS, 2010). Right now, we are in the midst of the transition from paper as the main support for reading to the screen, in its variety of formats and characteristics (KRESS, 2010). According to Kamantzis e Cope, “new communication and media are reshaping the way we use language. When technologies of meaning are changing so rapidly, there cannot be one set of standards or skills that constitutes the ends of literacy learning, however thought.” (KAMANTZIS & COPE, 2000, p. 6). Therefore, when discussing the “crisis of reading”, we are talking about a crisis in the traditional definition of reading, in which reading means decoding and comprehending the written text, in most cases presented through print media. Although this ability continues to be fundamental in readers’ development and there is still a lot to be improved in Brazil in terms of traditional literacy, to be a reader nowadays requires capacities and abilities that go far beyond and contemplate the mediatic complex landscape in which we live.

Never in the history of humanity individuals have been so exposed to texts and information; equally, there has never been a time where individuals have had this massive capacity for textual production. This capacity is so widespread that even children and young people now have the potential of

creating photographs, memes, illustrations, posters, banners, videos, written texts, etc., which are produced and/or distributed via the internet. This textual production creates the (or part of the) communicational context in which we live in, at the same time that it is created by this same context; the texts are also limited by the affordances of the medium, in a complex relationship between '*langue*', or the linguistic system, and '*parole*', or the individual enunciations (SAUSSURE, 1974); here, '*langue*' is understood widely as the communicational system in which we live in, and '*parole*' as multimodal – thus not only verbal – enunciations.

This complex system, however, hardly enters the school, creating a serious disparity between the abilities children and young people develop and use in their every day life and that are essential for their future as (multi-) literate adults, and the reality of the classroom. This intense communicative reality many times is accused of replacing children's free time dedicated to reading and literature, but the truth might be that, especially in Brazil, the presence of literature in the lives of most children and young people has always been little, and digital communication is most likely to be replacing the time children dedicated to watching TV. However, many scholars argue that literature is fundamental to children's cognitive (KÜMMERLING-MEIBAUER & MEIBAUER, 2013), emotional (NIKOLAJEVA, 2013), aesthetic (KIEFER, 1988; 1995) and linguistic and literary (MEEK, 1982, 1988) development in childhood. Thus, how to bring to the classroom the digital communicational landscape, explore new types of literacy that emerge in this scenario, and, at the same time, to promote in an attractive and interesting manner the reading of literature to children and youth?

This work aims to suggest children's interactive picturebook apps as a form of literary expression that reflects this complex communicational reality and that can be explored in the educational context, bringing to the classroom already in the first years of formal education a new narrative form with the potential to develop readers in all their facets.

Expanding the definition of “reading”: reading as sign-making

According to multimodal social semiotics (KRESS, 2010; VAN LEEUWEN, 2015), reading goes far beyond decoding the written text. Reading is unders-

tood as the process of co-creation of signs, signs which can be presented in different modes, such as the written, visual, aural, kinetic, etc. modes. The reader, therefore, is not passive, but an agent in the reading process, bringing their literary competence, in addition to their life experience, interests, and motivations at the time of reading. The act of reading is situated, positioned in a unique space-time. As a result, all re-reading is a new construction of meaning, as although part of the texts is static and fixed on a support, other variables, related to readers and their socio-cultural context, change.

Understanding reading as a co-creation of signs allows us to re-think the development of readers to incorporate, besides texts in which the written mode predominates, multimodal texts. Kress (2010), and Kress e van Leeuwen (2006) argue that, in reality, the written text is multimodal, because it shows the verbal language represented visually, thus graphic elements such as font, size and colour contribute to the construction of meaning.

The dynamics of the written language and typography have been explored, for instance, in concrete poetry. However, a significant part of written texts to which we have access today are modal ensembles that articulate the verbal language with images. In print media, textbooks, newspapers and magazines are obvious examples of that. Comics and picturebooks are examples of literary texts that explore this complex relationship with a poetic result. In digital media, words and images can be integrated with movement, sound and interactivity, which incorporates the gesture of the reader in the construction of the text. This combination is present in many websites, social media, blogs, news portals. It is also strongly present in the way we navigate digital devices like computers, smart phones, and tablets, in which operational systems and apps make strong use of a multimodal communicational dynamics. In literary terms, apart from electronic literature available on the internet, in many cases still of an experimental kind, the so-called book-apps are increasing in importance and visibility, especially for younger audiences. They explore the poetic affordances (SCHWEBS, 2014) of the digital medium through their multimodal and interactive features. In 2015, the Jabuti award, the most important Brazilian publishing and literary award, has included, for the first time, the category “children’s digital book”, raising awareness to this kind of production and possibly stimulating the production of new titles.

What are interactive picturebook apps?

The interactive picturebook app is a new format of literary expression aimed at children that expands the verbo-visual characteristics of print picturebooks by incorporating sounds, movement, and interactivity. Since 2010, with the launch of the iPad, interactive books appear mostly as apps for mobile electronic devices such as tablets and smartphones, the reason why they are usually called book apps.

Differently from the CD-ROM format, available mostly for desktop computers and operated via mouse and keyboard, restricting the access of small children, the size, weight and portability of mobile devices make the reading experience of picturebook apps' digital narratives significantly more similar than that of the print book, while the touch screen technology allows the direct participation of the reader into the narrative, without the mediation of a mouse (AL-YAQOUT, 2011).

Picturebooks are defined by the complex relationship and interdependency between verbal and visual elements. They differ from the illustrated book, in which the verbal text is central to conveying the narrative and the visual elements have a decorative and secondary role (NIKOLAJEVA; SCOTT, 2011). Lewis (2001) described the dynamics of the picturebook as an ecosystem, where the different verbal and visual signs that compose the narrative generate complex relationships whose meaning is bigger than the some of its parts. When one of these elements is changed, there are implications for the narrative as a whole; for instance, when a story is illustrated by a different artist, the result is a new and unique iconotext. In picturebook apps, this ecosystem is expanded with the inclusion of the affordances of aural, kinetic and gestural modes, in addition to the affordances of written text and images.

Interactivity is not a mode, but one characteristic that any text, print or digital, has in establishing a relationship between the world represented in the text and the real world, which includes the reader. In the digital environment, however, this relationship is more dynamic, because readers can intervene and, at times, change the world that is represented in the text through their actions; the frontiers between real and represented world are not fixed and clear as in most print texts. Therefore, picturebook apps allow children and young people to exercise this active relationship with texts – one which is

going to be part of their literate culture throughout their lives – from the very beginning of their journey as readers. Interactivity has an intrinsic ludic aspect to it, one reason why it is very appreciated by children; this aspect can work as an important source of motivation, attracting readers that might still be facing difficulties in decoding the written text to the literary sphere.

The new and multiple possibilities of multimodal combinations in picturebook apps generate infinite possibilities; therefore, each app presents very particular features and characteristics. In general, these are hybrid texts because they combine characteristics of different narrative forms, such as the print picturebook, animated movies, and electronic games. As an application or a piece of software, in technical terms, these narratives have the potential of exploring all the resources of digital media; however, the high cost of production results in that, in many cases, these books end up closed to a simple digitalized version of a print book rather than a truly interactive narrative. In this paper, are being considered especially interactive picturebook apps that explore the potential of the digital medium innovatively and creatively, beyond what is possible in print media. In the following sections, some examples will be presented.

Interactive picturebook apps and traditional literacy

Although nowadays it is widespread to conceptualize literacy as “the reading and writing skills required for participating in social literate practices” (SOARES, 2004, p. 7) (in Portuguese, the notion of ‘*letramento*’), the process of learning how to decode (in Portuguese, ‘*alfabetização*’), or “learning the system or the technology of writing” (SOARES, 2004, p. 7), is still very important in early stages of literacy education. Literature is a traditional ally in learning how to decode. But what do picturebook apps offer beyond what is already available in print books? First of all, the potential of apps resides in the fact that, in most cases, they allow readers to follow the written text with professionally recorded narration. Reading-aloud, at home or school, is fundamental for the acquisition of literary competence (SIPE, 2008) but this practice is not widespread amongst Brazilian families and schools. The relationship between the sound of the words and their written equivalent is fundamental in early stages for the development of phonologic awareness and

becomes more meaningful if contextualized within the reading of a narrative. In these interactive stories, the contextualization and the construction of meaning in the integration of written and spoken words within a narrative is intensified with the visual text and the aural text – such as sound effects and soundscape/soundtrack. Interactivity enhances the playful aspects of the narrative, present in the play of words and sounds, in visual games and in metafictional play, which includes the participation of the reader in the narrative.

Narratives such as *Tiny Great True Stories* (LU, 2015) include also the audio recording feature, in which readers can record their own narration of the story. It is important to acknowledge that the professional narration mitigates the emotional bond between child and co-reader – parent or teacher – which obviously influences children's relationships with the texts and with the written word. On the other hand, the recording feature allows parents, grandparents, teachers or other co-readers to record personalized narrations of the story, recreating this bond when they cannot be present to read to the child. Regarding the development of decoding skills, this function allows beginner readers to have a register of their own reading-aloud skills. The appreciation of children's oral production can have an important positive impact on their self-esteem as readers. In addition, the possibility of observing this development and comparing different stages can be a valuable tool for teachers in terms of evaluation and assessment.

Other uses of this feature can be seen in the apps *Chapeuzinho Vermelho* (Little Red Riding Hood) (MASSARANI, 2011a) and *Os Três Porquinhos* (The Three Little Pigs) (MASSARANI, 2011b), which allow children to tell (and record), with their own words, these classic fairy tales, represented in the app as a wordless visual narrative. Here, children's already developed capacity to create oral stories can be used as a starting point to their written production, still under development.

Multiliteracies

The concept of multiliteracies was proposed in 1996 by the so-called New London Group, a group of scholars from the United States, United Kingdom and Australia who gathered in 1994, in New London, USA, to discuss new pedagogical frameworks to the teaching of literacy. According

to Kalantzis e Cope (2000), the expansion of the notion of literacy to one of multiliteracies aims at assimilating in pedagogical practices two important changes in today's communicational environment: first, with the multiplicity of communication modes and media available in contemporaneity, what has been called multimodal literacy; also, the prefix *multi* refers to the increasing cultural and linguistic diversity in a globalized world. This last aspect will not be discussed in this paper, but it is important to have into consideration that great part of picturebook apps are bi or multilingual, in contrast to the small production of bilingual print titles for children. In addition, many apps produced in other countries are available in Portuguese, allowing Brazilian readers to get in touch with stories and cultures from other places.

Picturebook apps and multimodal literacy

Based on print multimodal texts, Serafini defines multimodal literacy as “a process of generating meanings in transaction with multimodal texts, including written language, visual images, and design features, from a variety of perspectives to meet the requirements of particular social contexts” (SEFAFINI, 2015, p. 413). Children's literature can be an important ally in the promotion of multimodal literacy, as picturebooks, comics, and graphic novels allow complex relationships between verbal and visual signs, creating symbolic, metaphoric and poetic effects. These texts require not only the skill of reading and comprehending verbal and visual codes separately but also comprehending how the intermodal relations corroborate or contest their individual meanings in the creation of one new multimodal sign with a unique meaning (SIPE, 1998).

In digital narratives, the verbal, visual and design aspects are also present, but the definition of multimodal literacy needs to be expanded for the analysis of the picturebook app, and include also the reading and orchestration of moving images, aural signs and interactivity. Nevertheless, differently from the teaching of reading and writing, which is now structured and established, how to deal with visual, aural and digital literacies using picturebook apps?

First of all, multimodal literacy is interdisciplinary in essence and can present an opportunity for the integration, for instance, of language arts with music, visual arts and IT teaching, dealing with different aspects of these other forms of literacy through various disciplines.

Serafini (2010; 2015), based on the functional visual grammar (KRESS; VAN LEEUWEN, 2006), proposes a model of analysis of the print picture-book that can be used in the educational context to the promotion of multimodal literacies. This model is structured in three levels:

- *Perceptive*: most basic level of analysis, which emphasizes the literal meanings of the signs. In pedagogical terms, it means to look in detail at the signs that compose the text, identifying, classifying and naming these elements.
- *Structural*: level that analyses the functional grammar of the different modes that compose the text, or how the structures of the verbal, visual, aural, etc. modes contribute to the creation of meaning. At this level, are also considered the relationship between different modes.
- *Ideological*: level in which are analysed the socio-cultural, historical and political contexts in which these texts were created, and in which they are being read. This discussion includes the creation and distribution of texts, and the critical analysis of the representations present in this text, dealing with racial, gender, power and stereotype issues, for instance.

The combination of different levels of analysis not only aims at supporting children into becoming competent readers in the various modes that compose the multimodal text, but also in promoting the critical reading of these modes and of the meaning of the multimodal text as a whole; after all, “being multiliterate requires not only the mastery of communication but an ability to critically analyse, deconstruct, and reconstruct a range of texts and other representational forms. It also requires the ability to engage in the social responsibilities and interactions associated with these texts.” (ANSTEY, 2002, p. 446).

Although Serafini’s model is based on the print text, it can be equally applied to digital texts like picturebook apps; however, the complexity of the digital text and teacher’s lack of experience in dealing with, for instance, aural signs, may generate a challenge for its pedagogical use.

In continuation, an example of the application of Serafini’s model to the analysis of the picturebook app *Quem soltou o Pum?* (in a literal translation,

Who let Fart go?) (FRANCO; LOLLO, 2011) will be briefly presented. In this story, a boy talks about the problems of letting Pum (Fart) go. While the verbal text talks about the difficulties related to letting it go, for instance, when Fart is noisy or when Auntie lets Fart go and pretends it was not her, the visual text shows that Pum is, in fact, the family's dog, so irony is created in the counterpoint between verbal and visual texts resulting in a humorous effect in the multimodal text. The use of movement, interaction and sounds in this app complement this system of meanings, expanding and enhancing the meanings created by the iconotext. At the end of every level of analysis, a list of questions that teachers can use to discuss the narrative, guiding readers to articulate their critical and comprehension skills, is presented. These questions can be easily adapted to the analysis of other texts, print or digital.



Figure 1: Scene of the picturebook app *Quem soltou o pum?* (FRANCO; LOLLO, 2011).

Perceptual analysis

In the perceptual level, readers must be stimulated to explore what is immediately apparent in the narrative, identifying the elements present in each one of the modes used in the construction of the story. In this scene, four

characters are represented in the visual text: the boy, the dog, the father, and the neighbour. It is possible to identify the neighbour as such because he is mentioned in the verbal text and is separated from the others by a wall. There are also objects around the boy and the dog: brooms, a squeegee, a rake, a broken bottle, boxes, a bucket.

There are two elements in the scene that have movement and they are also the only ones accompanied by a sound effect: the bucket, which can be dragged by the reader and produces a loud and acute sound of metal when the bucket “bumps” into the corners of the screen; and the neighbour, which points his index finger in the air scolding the boy and the dog.

In the verbal text, the same characters are present, but the boy is represented by the pronoun “I” and the dog is identifying by its name: Pum (Fart). The boy talks about one problem caused by Pum’s noise: the neighbour’s complaint, which is represented in the visual text. As a consequence, the boy mentions “holding (in) Fart” so that it will not make any noises. This information, however, is only present in the verbal text in the scene in question.

Suggestion of questions for the perceptual analysis:

- What are the elements present in this story/scene? Which are in the verbal text? Which are in the visual? What about the aural?
- Which elements in this scene/story present movement? Which present sound?
- Which elements are present in the paratext?

Structural analysis

In the structural analysis of the story, it is necessary to go beyond the description of the different modes and their denotative meanings and question how these modes create these representations, how they interact in the construction of the multimodal narrative and what are their potential for connotative meanings. Here are explored the functional grammars of the verbal (HALLIDAY; MATTHIESSEN, 2004) and of the visual (KRESS; VAN LEEUWEN, 2006) modes, and although the aural mode may not present a precise meaning system with clear associations between representation and

meanings, aural signs have certain perceptive qualities that suggest sensuous and intuitive meanings (VAN LEEUWEN, 1999). Understanding the dynamics of interactivity in the construction of meaning in the narrative is also an important aspect of this analysis, which can be supported by the detailed description in the perceptual analysis.

At this level of analysis, it might be necessary to have pupils introduced to some terminology and concepts, or a metalanguage that allows them to analyse these characteristics of the text (ARIZPE; STYLES, 2015). For instance, the concept of salience (KRESS; VAN LEEUWEN, 2006) refers to the visual element that draws the eye of the reader – which can be achieved by the use of colour, shape, size, etc.) and thus attributes to this element a higher hierarchical value in the visual representation; another concept can be the spectrum from high to low to describe aural signs. For more analytical tools to this level of analysis, check Serafini (2010; 2015) or the functional grammars of the different modes mentioned above.

In the app being discussed, an essential aspect of the narrative is the meaning of the expression “soltar pum” (something similar to “let it go” when referring to flatulence), necessary not only to understand the scene, but the narrative as a whole and thus experiment the ironic, playful and humorous features of the literary text. The verbal text does not mention that Pum (Fart) is a dog; this information is only present in the visual text. In most scenes, the verbal text, if analysed in isolation, can be interpreted as the boy's problems with flatulence. Nevertheless, through the careful analysis of the written text, the reader can have some clues to question the meaning of Pum, as the word is capitalized, meaning it is a proper noun. If the text is being read aloud, by the narration feature or a co-reader, these feature might go unnoticed.

Having identified the characters in the first level of analysis, at this level we may look for clues as to how these representations are being constructed. The boy and the dog are the central characters of the narrative. In the visual text, this meaning is suggested by the use of colour. The dog is colourful and the boy is “coloured” in white, while the remaining visual elements are represented by black contours in a yellowish/beige background. The use of colour, thus, attributes salience to these two characters, it attracts the eye of the reader and suggest their importance in the story.

The actual noise that can be heard in the app is not the noise of farting as suggested by the verbal text – “às vezes o Pum fazia muito barulho” (“sometimes Pum/Fart made a lot of noise”) – but is in alignment with the visual narrative: it is represented by the sound of the bucket crashing into the limits of the screen. The sound is loud and uncomfortable, thus justifying the complaint from the neighbour. The neighbour’s complaint is also represented by his hand movement, signing “no”, and by the tone of voice of his complaint, even though the contents of his complaint are not revealed as he is just babbling, and not speaking a real language.

Suggestions of questions for the structural analysis:

- What does the expression “soltar pum” (“let it go”) mean? And what does it mean in this story? How do we know that the meaning is different?
- Looking at the written text, how do we know that Pum (Fart) is not referring to flatulence, but to a being?
- What are the main characters of the narrative? What aspects of the visual text suggest that?
- What each of the sounds present in this scene mean?

Ideological analysis

The ideological analysis is the most complex level of analysis and requires the articulation of elements that are present in the text with elements that are not, necessarily, visible, such as systems of power and oppression, the historical context in which the text has been created and also the understanding of the process of production and distribution of texts. This contextualization can be explored by the teacher before or during the analysis of the text. In the case of picturebook apps, it is also possible to explore the differences between print and digital texts and their different processes of production and reception, contributing to the development of digital literacy.

The notion of authorship, for example, can be analysed in the ideological level. In this discussion, it is important to consider the paratextual elements – which can, in fact, be analysed at every level – and, thus, to discuss the

text beyond the narrative, considering how the information available in the paratext can influence the interpretation of the text. In this app, the authors of the writing and of the illustration appear at the first scene, equivalent to the book cover in the print counterpart, thus showing great importance; they are also presented in detail at the end of the narrative, in an introduction screen. On the other hand, the authors of the soundscape and sound effects are only seen at the credits list. Therefore, different forms of authorship are valued differently in the publishing system of digital picturebooks. In this example, even though the sounds are limited to certain elements of the story, they are essential to the digital literary experience and in making this experience different from what's available in the print book. Pupils can also be confronted with the print version of the story to discuss this and other differences between the two versions, including reader's access to each version. What are the advantages and disadvantages of print and digital texts? For instance, it can be discussed that children with a lower socio-economic status may not have access to a tablet computer and thus to the app, and in most cases this kind of publication is also not present in public libraries. On the other hand, a child that lives in a town where bookshops and libraries are not present might not be able to access the print book at all, but might be able to download the app from their homes or schools. These questions not only expand the reading possibilities of the narrative in question, but stimulate critical reflection about the communicational environment we live in and their consequences in the lives of individuals.

Another ideological aspect that can be discussed in this narrative refers to the power relations between children, adults and animals. For instance, in the scene presented, the visual text shows the father as authority: he is tall, slim, positioned in the centre of the scene, looking down towards the boy, a representation of the adult and child/animal relationship that is repeated throughout the narrative. The boy and the dog, on the other hand, are approximately of the same size, suggesting power equality. In addition, Pum is always treated by his first name, while the boy and the other characters – the only exception being Aunty Clotilde, who is tolerant to Pum's mischiefs – are named; besides the humoristic effect, the personalization of the dog suggests humanization.

Suggestion of questions for the ideological analysis:

Historical aspects:

- When was this story created? In which period of time does the narrative take place?
- Which aspects of the text indicate the time frame of creation? And of the time frame when the narrative takes place?
- What do you know about the time(s) in question?
- Production and reception:
- Who is the likely audience of this story? How can we infer who the audience is?
- Can any Brazilian child have access to this story? Why? Or why not?
- What are the differences between this story and a/the print version of it?
- Authorship:
- Who are the authors of the story?
- What elements constitute the story? Is the story only the words? Are the images part of the story? What about the sounds?
- Who has created the images? What about the sounds? How can we find this information in the app?
- Power relations:
- Which characters are represented with more power, privilege or authority in the story? Which aspects of the text indicate that?
- What are the characteristics (of race, gender, etc.) of the privileged/more powerful group?
- How do these representations relate to our contemporary reality? And how do they relate to the historical aspects of this reality?

The analysis presented above is not by any means exhaustive. This and any story present numerous aspects that can be explored with this model of analysis, but the aim was to exemplify, within the limits of this paper, some of the possibilities. This analysis also does not aim to be definitive. One central aspect of multimodal social semiotics is that texts have a meaning potential, and this potential may be unfolded or not depending on the interests, motivations and experiences of the reader, and yet in accordance with the socio-cultural context in question; therefore, meanings are not fixed, but fluid.

Finally, although the ideological analysis might seem too complex for the first stages of primary education, earlier studies about children's responses to literature indicate that children as young as four-year-old are capable of understanding narratives with complex abstract and symbolic contents in its nuances (ARIZPE; STYLES, 2015). Thus, it is up to the teacher to adapt the questions to the level of the pupils, and progressively challenge them with more complex questions. To discuss the ideological aspects of a text it is not necessary to talk about ideology directly. As discussed, the theme of authority and power relations between adult and child is part of all children's everyday experiences.

Final notes

Unfortunately, the access to electronic devices were one can download and read picturebook apps in Brazil is still limited and almost inexistent in the public education system. Nevertheless, it is fundamental that teachers are informed about these materials and the immense potential they have in promoting reading and multiliteracies in the first years of schooling so that they can vindicate this technology for their schools.

A recent study in the UK shows that, although most children in that context have access to tablets, the use is mostly to access videos and games, while the use for access to stories is still quite limited (MARSH; PLOWMAN; YAMADA-RICE *et al.*, 2015). Therefore, even in the case of more privileged schools, it is important to support to parents regarding the best uses of this technology and how and where to find high quality content, especially literary content.

References

AL-YAQOUT, Ghada. From Slate to Slate: What does the Future Hold for the Picturebook Series? *New Review of Children's Literature and Librarianship*, Abingdon, 17.1: 57-77, 2011.

ANSTEY, Michèle. "It's not all black and white": Postmodern picture books and new literacies. *Journal of Adolescent & Adult Literacy*, 45.6: 444-57, Malden, USA, 2002.

ARIZPE, Evelyn; STYLES, Morag. *Children Reading Pictures: Interpreting Visual Text*. London: RoutledgeFalmer, 2015.

FRANCO, Blandina; LOLLO, José Carlos. *Quem soltou o Pum?* (book-app). Version 1.2. Companhia das Letras, 2011. Available for iOS.

HALLIDAY, M. A. K., & MATTHIESSEN, C. M. I. M. *An introduction to functional grammar*. London: Edward Arnold, 2004.

JEWITT, Carey. Multimodality, “reading”, and “writing” for the 21st century. *Discourse: Studies in the Cultural Politics of Education*. 26.3: 315-31, 2005.

KALANTZIS, Mary; COPE, Bill. *Multiliteracies: Literacy learning and the design of social futures*. London: Routledge, 2000.

KIEFER, Barbara. Picture books as contexts for literary, aesthetic, and real world understandings. *Language Arts*, 65.3: 260-71, 1988.

KIEFER, Barbara. *The potential of picturebooks: From visual literacy to aesthetic understanding*. Englewood Cliffs: Merrill, 1995.

KRESS, Gunther R. *Multimodality: A social semiotic approach to contemporary communication*. London: Routledge, 2010.

_____, Gunther R.; VAN LEEUWEN, Theo. *Reading images: The grammar of visual design*. New York: Routledge, 2006.

KÜMMERLING-MEIBAUER, Bettina, & MEIBAUER, Jörg. Towards a cognitive theory of picturebooks. *International Research in Children's Literature*, 6.2: 143-60, 2013.

LEWIS, David. *Reading contemporary picturebooks: Picturing text*. New York; London: Routledge Falmer, 2001.

LU, Oamal. *Tiny Great True Stories* (book-app). Version 1.1. Editora Caixote, 2015. Available for iOS.

MARSH, J.; PLOWMAN, L.; YAMADA-RICE, D.; BISHOP, J.C.; LAHMAR, J., SCOTT, F.; DAVENPORT, A.; DAVIS, S.; FRENCH, K.; PIRAS, M.; THORNHILL, S.; ROBINSON, P; WINTER, P. Exploring play and creativity in pre-schoolers' use of apps: Final project report. *TAP: Technology and Play*, <http://www.techandplay.org>, 18/10/2015.

MASSARANI, Mariana. *Chapeuzinho vermelho* (book-app). Version 1.2. Manati, 2011a. Available for iOS.

- _____. Os três porquinhos (book-app). Version 1.2. Manati, 2011b. Available for iOS.
- MEEK, Margaret. *Learning to read*. London; Toronto: Bodley Head, 1982.
- MEEK, Margaret. *How texts teach what readers learn*. Stroud: Thimble Press, 1988.
- NIKOLAJEVA, Maria; SCOTT, Carole. *Livro ilustrado: palavras e imagens*. São Paulo: Cosac Naify, 2011.
- NIKOLAJEVA, Maria. Picturebooks and emotional literacy. *The Reading Teacher*, 67.4: 249-54, 2013.
- SAUSSURE, Ferdinand de. *Course in general linguistics*. London: Harper-Collins, 1974.
- SCHWEBS, Ture. Affordances of an app - A reading of The Fantastic Flying Books of Mr. Morris Lessmore. *BLFT - Nordic Journal of ChildLit Aesthetics*, Elverum, Norway, 2014, <http://www.childlitaesthetics.net/index.php/blft/article/view/24169>, 20/10/2014.
- SERAFINI, Frank. Reading multimodal texts: Perceptual, structural and ideological perspectives. *Children's Literature in Education: An International Quarterly*, 41.2: 85-104, 2010.
- _____. Multimodal literacy: From theories to practices. *Language Arts*, 92.6: 412-23, Urbana, USA, 2015.
- SIPE, Lawrence. How picture books work: A semiotically framed theory of text-picture relationships. *Children's Literature in Education*, 29.2: 97-108, 1998.
- _____. *Storytime: Young Children's Literary Understanding in the Classroom*. New York: Teachers College Press, 2008.
- SOARES, Magda. Letramento e alfabetização: As muitas facetas. *Revista Brasileira de Educação*, 25: 5-17, Rio de Janeiro, 2004.
- UNSWORTH, Len. *Teaching multiliteracies across the curriculum: Changing contexts of text and image in classroom practice*. Philadelphia: Open University, 2001.
- VAN LEEUWEN, Theo. *Speech, music, sound*. New York: St. Martin's Press, 1999.
- _____. *Introducing social semiotics*. London: Routledge, 2005.

O FUTURO DO LEITOR OU O LEITOR DO FUTURO: O LIVRO INFANTIL INTERATIVO E OS LETRAMENTOS MÚLTIPLOS

RESUMO:

Esse artigo explora o livro infantil interativo como forma de expressão literária que exige do leitor infantil orquestrar diversos tipos de letramento para, em última instância, desenvolver sua capacidade de ler criticamente textos multimodais, digitais e interativos diversos. O modelo de análise envolvendo os níveis perceptivo, estrutural e ideológico (SERAFINI, 2010; 2015) é proposto para promover, por meio dos livros digitais, a articulação de múltiplos letramentos na escola.

PALAVRAS-CHAVE: livro infantil interativo; letramentos múltiplos; letramento multimodal.

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