



The electronic text and a new nature of literacy

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Abstract

The electronic text has provoked a new evolution on the concept of literacy. The new features of digital text have opened new dimensions to the way literacy should be understood. The electronic text has acquired new attributes that have dramatically influenced literacy practices. Printed and digital texts share some basic features, however the digital hypertext is indeed more complex than the printed one due to that the former is usually enriched with multimedia resources. Additionally, the quality and quantity of information found in the digital text have added new reading requirements to electronic text users. Readers might need to make a more efficient use of the competencies they already manage with printed text in order to face the digital one. This paper is an attempt to understand this new literacy scenario. The discussion is devoted to exposing some features of the electronic text in order to support the idea that the concept of literacy should be as broad as to cope with the competencies and skills the features of the digital text demand. The pedagogical implications emphasize on the challenges the electronic text takes to school.

Key words: Literacy, Information and Communication Technologies (ICT), Electronic text, Hypertext, Digital Literacy.

Resumen

El texto electrónico ha provocado una nueva evolución en el concepto de lectoescritura. Las nuevas características del texto digital han abierto dimensiones nuevas a la manera como el concepto de lectoescritura se debe entender. El texto electrónico ha adquirido nuevos atributos que han influido dramáticamente en las prácticas de lectura. Los textos impresos y digitales comparten algunas características básicas, sin embargo el hipertexto digital es en sí más complejo que el impreso debido a que el primero está usualmente enriquecido con recursos multimediales. Además, la calidad y la cantidad de la información encontrada en el texto digital ha traído consigo nuevos requerimientos a los usuarios de textos electrónicos. Los lectores necesitan usar las competencias que ya manejan de una manera más eficiente para enfrentar el texto digital. Este documento es un esfuerzo por entender este nuevo escenario de la lectoescritura. La discusión se centra en exponer algunos de los rasgos del texto electrónico con el fin de apoyar la idea de que se debe adoptar un concepto de lectoescritura tan amplio que incluya las competencias y habilidades que el texto electrónico exige. Las implicaciones pedagógicas hacen énfasis en los retos que el texto electrónico lleva a la escuela.

Palabras claves: Lectoescritura, Tecnologías de la Información y la Comunicación (TICs), Texto Electrónico, Hipertexto, Lectoescritura Digital.

Literacy Concept Evolution as Consequence of the New Features of the Electronic Text

Introduction

Understanding the concept of literacy is indeed a difficult business, but it becomes even more difficult when a new character, the electronic text, appears in the literacy scene. So far, I have read different books and articles addressing literacy and the way it has been conceived by different authors. Most of them, being valid, might have not had time, maybe because of its novelty, to go through a new kind of text: the electronic text, that is a digital text on the Internet. It seems to me that conceptions of literacy stated so far have not considered the digital text features and the way they might have changed the concept of literacy. In other words, those conceptions might have not considered the specific features of the digital text, which include hypermedia resources and a great amount of information.

Due to the new features of electronic texts, some issues might have not been examined and might have had some influence in the way literacy has been traditionally understood. In this paper I want to explore the electronic text and the way the nature of literacy could change or be enriched by a new kind of text. For doing so, I will describe the features of the digital text and how it has diversified some literacy activities. Later, I will discuss how following an inquiry approach for learning and becoming literate can contribute to solve some of the shortcomings of using electronic texts for literacy purposes. Finally, I will draw some pedagogical implications and conclusions.

The electronic text

Texts found on the Internet —also called electronic texts or e-texts— have some different and special features, which should change the way literacy is conceived. Due to the special features of electronic texts, which include hypertexts and multimedia elements, the concept of reading may adopt a new nature and has to be understood as a broader concept. According to Schmar-Dobler, E. (2003), the new features of the digital text call for a new nature of literacy. She considers that Internet text —which include a great amount of information, colorful and interactive layouts as well as expository texts— demands from readers a more effective use of reading strategies. For example, in a study carried out by Sutherland-Smith, W. (2002) students had to



read both in printed text and on the Internet and then report on the impression they had about the two kinds of reading. Students, in general terms, reported differences in both kinds of reading in terms of speed in the reading activity, amount and quality of the information and the students' expectations about both kinds of texts. The electronic text demanded them to go quicker, as it displayed a lot of information at the same time while when reading books they did not expect to find the information almost immediately because with books finding the information requires more time. The electronic text also demands the use of other sign systems, such as music, mathematics, pictures, and arts to manage the text more globally. In other words, Internet readers need to apply some strategies more effectively to cope with electronic texts.

About the special features of the digital text, some researchers have explained how the structure, quality and quantity of contents of electronic texts may differ from the features of printed texts (Sutherland-Smith, W., 2002, Chatel, 2003, Coiro, 2003). According to Henao (1998) printed texts have been the most important support for human beings knowledge, however, nowadays and in the forthcoming years, they will not be the only "reading object" since "most of those printed text will be distributed electronically" (p. 51). The electronic text new features, which include rich and different audiovisual devices, will make the activity of reading quite different from what it is now.

The first feature has to do with the electronic text organization. The electronic text is structured as a hypertext. Theodor H. Nelson, as referred by Clavijo and Quintana (2004), coined this concept. A hypertext, according to Jonassen (1989, cited by Jonassen, 1996), refers to "a nonsequential, nonlinear method for organizing and displaying a text" (p. 188). A hypertext is composed of different nodes connected by links which make up a web, so the structure of a hypertext is neither linear nor hierarchical but web-like (Gillingham et al, 1994). A node can be a simple piece or "chunk" of text or a complete one.

This narrative structure is not a privilege of digital text since printed text can also be organized as hypertext. A digital hypertext has the same basic structure of a printed one, however what makes the difference between both of them is the amount of nodes and the different representational systems used in each kind of text. The printed text is more limited due to the space available for publication and the kind of resources used to communicate meaning to readers. The electronic text, instead, is not limited to space or resources. The



user can easily access nodes in an electronic text only by clicking on the link. Besides this, the electronic text offers different sign systems to represent meaning. For example a link can lead the user to a photo gallery, a video, or a virtual trip.

A node can be considered as the beginning of the text, but the content and end remains tentative. The great amount of interconnections offered by the electronic text might cause that the boundaries of each text gets vanished. According to Henao (1998), the hypertext structure of the electronic text opens new possibilities to the reader who is the one who finally decides the route and end of the text.

Moreover, the hypertext with this kind of structure is characterized by a lack of direction to the user. The links displayed in each node do not suggest any specific connection to where readers should go; they have to establish meaningful connections out of the information. In other words, the hypertext structure is flexible and lets readers decide the path according to "their own interest, questions and personal reading style"(p. 100) as mentioned by Peña (1999). He also calls the attention to the way hypertext structure has influenced new terminology to refer to reading practices, such as 'navigate' which is the activity of exploring paths that can lead the reader somewhere or nowhere. He concludes that "the electronic text is a digital technology that, as it happened before with other text technologies, is beginning to change the way of reading and writing" (p.101).¹

Clavijo and Quintana (2004) stated that the most important part of a text is neither its beginning, nor its end, but the links that readers can establish as a whole, thus building a structure that has not been previously established by another person. Similarly, the digital text itself offers readers a wide variety of roads where they can navigate different texts "that are joined by links and that offer readers as many reading ways as nodes it has" (p. 36).²

The main repercussion of the hypertext structure of the electronic text on the nature of reading is that it demands from the reader the development of good decision making skills, so they can decide where to go since the

1 Translation by the author

2 Translation by the author



hypertext does not guide or give any direction to the reader. In other words, they have to develop new competencies to cope with the new features of the digital text. As well as with the printed text, readers' competency to make sense of the text is crucial, but in the digital scene that competency must be sharpened so readers can select suitable information according to their needs from a huge amount of possibilities. For example, Jonassen (1996) stated that when users retrieve information from electronic texts, they have to use more sharpened critical thinking skills such as analyzing, connecting and evaluating the information. Those critical thinking skills are indeed necessary to encourage internet users to avoid what Sutherland-Smith (2002) have labeled as "Snatch and grab philosophy" (p. 664) which consists on downloading any piece of information with little or not evaluation of the reliability and usefulness of the information.

The second feature has to do with different ways to represent meanings used in the digital text. The electronic text displays information in written texts that are enriched with multimedia sources. In some cases, the node consists of different media forms such as an image, a video clip, a sound or an animation sequence. In this case, it is called hypermedia, which is a combination of multimedia and hypertext. These multimedia elements make the reading process more complex (Sutherland-Smith, W., 2002) than reading or interpreting an image in a printed text as language is not the only system for communicating meaning.

Displaying the information in different systems can both enrich the reader's understanding of the text and distract the readers' attention. On the one hand, readers can take advantage of the multimedia devices, which characterize the electronic text to display information, to understand the text, especially when language weaknesses are present and block the understanding of the message. Electronic texts many times illustrate their content by using photographs and videos, which play a key role in clarifying the text and getting the reader involved in the process. On the other hand, pictures, images and sounds can distract readers and lead him or her to lose the focus of the initial purpose of the reading activity. There are not research studies to demonstrate this issue, however, Schmar-Dobler (2003) points out that "lots of eye-catching images and phrases can guide or distract the reader" due to the unlimited amount of information found on the internet (p. 2).

Another aspect to consider is the quantity of information of the electronic text. The e-texts expose readers to a vast amount of information at the



same time, due to the web-like structure of the hypertext. Each node can be connected to two, three or even more nodes. Likewise, those nodes are connected with other two or three, so they grow in geometrical proportion. This amount of information demands from the reader an appropriate use of reading skills and strategies in order to cope with the information provided. According to Jonassen (1996), the big amount of information found on the Internet can get users lose track of the original route they planned, can confuse them, and can even misinform them. Losing the track when searching for information might likely happen in a library search, nevertheless printed text readers take more time to explore each source before checking another one due to the time and effort that finding another book demands.

Regarding the quantity of information found on the Internet, the concept of navigation can be seen as a new and different reading activity. The word refers to the same activity a sailor does in the sea. With the appropriate instruments and the necessary skills developed through practice, he or she can reach a port. In the same way, a person immersed in the Internet metaphorically becomes a sailor who navigates in that vast sea of information. Navigation is in fact a difficult activity, even more so if the reader is not sufficiently prepared for the activity. Some researchers have pointed out that the basic problem students face when reading on the Internet is the lack of skills to navigate effectively through a sea of multifarious information that, more often than not, presents itself at the information super highway (Levine, A., Ferenz, O & Reves, T, 2000, Smolin, L.I. & Lawless, K.A, 2003). Learners can be overwhelmed and confused not only by the amount and diversity of data found in electronic texts, but also by the time required to process it.

Finally, besides the formal characteristics mentioned above, electronic texts have some special features regarding the quality of content that teachers cannot overlook if they attempt to use this kind of text as a tool for literacy learning. Sometimes, the information has not been updated; nevertheless, it still remains in the web database. Beside this, information on the Internet can be manipulated with harmful purposes.

In a traditional text, a book for example, the editor and then the teacher can act as filters in order to warn the audience about a dangerous text. Additionally, printed texts are usually proofread and revised many times before being printed. In contrast, some electronic texts, being a public domain, might



have not been filtered by any authority before being published. So anyone who has access to a web platform can publish any kind of text and anybody can access it. That is why, today more than before, there is a need to encourage the development of critical comprehension strategies. In addition to critical reading strategies, Cunningham et al. (2000) suggests that readers also need to develop the “knowledge necessary to judge the credibility of sources, and they will need to know to whom to turn for support” (p. 66).

Piper (2000) agrees with the former researchers and states that “many Internet users are ill-equipped to do a capable job for scrutiny” (p. 40). In order to illustrate this idea he reported a case of an eight-grade student who wanted to participate in The Martin Luther King Day Essay Contest in his school. After checking a few encyclopedia articles in the library, he decided to search for more data on the Internet to document his essay. Unfortunately, he landed on some sites that were against King’s ideas and the information he found there stated that Martin Luther King was involved in a Communist Party and that the night before his assassination he had sex with three white women. Then, after reading that information on the Internet, the eight-grader decide to write the essay: “Why Martin Luther King doesn’t deserve a holiday?” This is just an example of the risk unprepared Internet readers can face on the web.

Since developing critical reading skills requires time and the results are not immediate, teachers might look for alternatives while students acquire that critical stance towards the material found on the Internet. Coiro (2003) proposes the use of online repositories in an effort to store critical evaluations of Internet sites done by teachers, students and experts in the field in order to filter the information that Internet readers consume.

Broad notion of literacy

Some researchers and specialists in the field agree that literacy is a changeable and always questioned concept. According to Labbo et al. (1998) “traditional notions of reading and writing will inevitably expand to include electronic or digital literacy” (275). Other researchers such as Teale et al. (2002) state that “Technology profoundly affects the learning and teaching of literacy, as well as the nature of literacy itself”. It involves more complex activities that lead to multiple literacies, which have been labeled with different names such as technology literacy, e-literacy, or computer literacy. Smolin and Lawless (2003)



mention three types of literacy: (1) Technological literacy, which is the ability to use technological resources to improve learning; (2) Visual literacy, which is the ability to understand and produce visual messages; and (3) Information literacy, which is the ability to find, analyze, evaluate, and synthesize information.

Teale et al. (2002) label different types of literacy according to the new technological advances that have emerged. Some of those types are “word processor literacy (e.g., using a spell checker or knowing how to format a paper), the literacies of e-mail (e.g., managing a digital address book or effectively using an electronic mailing list), and the literacies of the Web (e.g., using search engines to locate information on the Internet or knowing effective strategies to critically evaluate website information” (p. 1). In brief, the types of literacy are as varied as technological resources are.

However, none of the terms to define literacy covers all the reading activities that the literacy process implies by itself. That is why the concept of literacy has to be approached from a broad perspective. That broad view should include the text with a varied set of elements and everything that surrounds learners. This inclusion somehow helps readers to understand the world better. Short, Haste and Burke (1996) consider that literacy is a process “by which humans mediate the world with the purpose of learning” (p. 14) and in which learners use different sign systems such as language, art, music, math, dancing and so on, to mediate the world. This broad approach of literacy gives the opportunity to the learner to take different ways to become literate.

But the notion of literacy stated above cannot be taken to earth if literacy activities are not connected to daily practices of learning in which reading and writing are not the end but the vehicle of mediation to understand the world. Short et al. (1996) conceive literacy as a process of authoring and inquiry in which learners begin learning from their own experiences and, by means of stating and solving questions, become literate. In this process, the activities of reading and writing are the tools for learning. In addition, learners recognize the world and become part of the literate community.

Inquiry, therefore, becomes not an instructional model for getting learners literate, but a real reading and writing practice in the school. In order to illustrate this idea, some important aspects of inquiry as a process of becoming literate will be presented in the following paragraphs.

The foundations of the inquiry-oriented curriculum lie in the belief that learning takes place when learners attempt to solve a question which has been



stated by learners themselves and is meaningful to them. In their search for an answer to the question, learners are engaged in different activities through which they construct meaning. The search for the answer might demand from learners to use varied sources of information, including books and electronic texts. So the challenge of guiding learners through the intricate paths of information is present across the whole process of inquiry.

According to Wells (1995), the process of making meaning involves two dimensions. The first dimension has to do with the learners' mode of involvement that can be as ongoing participant or as spectator. The second dimension has to do with the degree of interrelatedness of the process of making meaning that can be unconnected and inconsistent or integrated and coherent. The intersection of these two dimensions leads to four categories that are in brief the way learners follow to make meaning.

The process of making meaning starts in the learners' experience, which is enriched by the information in the outside world when the learners become involved in ongoing learning actions. The next step in this process of meaning construction takes place when learners organize and integrate that personal experience and information into the broad structure of cultural knowledge. But the meaning construction process does not end here. Learners rely on that knowledge to construct a personal understanding of the world. This step of understanding becomes then a new personal experience for learners and that way the process starts again. In fact, the process of developing understanding or making meaning begins and ends in the learner itself guided by the teacher.

That co-construction of meaning is possible through an inquiry process (Wells, 1995) which starts with a real question. This type of question is meaningful to learners and entices them to find an answer. The process starts when learners search information in order to answer that question. Nonetheless, maybe the most important activity in this stage of the process is not just the search itself, but what learners do with the data. In other words, this refers to learners' ability to transform the information so they can make meaning out of it. Once the information is analyzed and interpreted to become part of the original question, inquirers communicate their findings to an audience after reflecting about the results of the research or about the process itself.

Some other authors have focused the attention not just on the nature of inquiry but on the problem-posing process, since a question is the starting



point in the inquiry process. Tower (2000) asserted, based on her experience with fourth graders, that students usually do not know how to research. Indeed—Tower added—the process of finding a problem and stating questions is difficult for them and requires guidance from the teacher. The first problem stems from the fact that the questions have to be real and born from their own interest. According to Wells (1995) the question has to be “personally significant” for the learner (p. 242) Secondly, students need guidance from the teacher to get to research questions, not just superficial and factual questions that can be answered by the information found in two or three sources. According to Sheingold (1987, cited by Tower, 2000) questions should lead learners to gather information critically by deciding which information is relevant and which is not. Finally, the question should be a research question, which means that it should not lead to a single answer, but encourage students to think “beyond literal details and into more intriguing content” (Owens, Hester & Teale, 2002).

Making the connection here between what I stated in the first part about the features of the electronic text and the notion of literacy, the electronic text can be a useful tool for inquiry. However, the challenge for teachers consists of guiding and helping the learner to develop the necessary skills to cope with the demands of the electronic text.

Pedagogical implications and conclusion

The impact of the use of new technologies on literacy has been stated by Warschauer (2001, as cited by Arici Taylor, 2002). He labeled some implications in five headings: (1) New contexts where computers are used as tools for teaching. These new contexts can be extended to the use of computers as mind tools to develop thinking skills as well. (2) New literacies are given by the knowledge and skills required to manage each one of the resources offered by the computer. (3) New genres such as websites and e-mails overcome the traditional essay. (4) New identities are assumed by learners when exposed to different and innovative electronic texts. And, (5) new pedagogies must be at the core of reflection and restatement by many teachers today.

From my own interpretation, the underlying message of Warschauer’s (2001) categories is that, in many cases, teachers’ role and responsibilities have changed dramatically the literacy practices have changed. Likewise, teachers



should not be technology-illiterate if they aim to guide students to deal with the new challenges imposed by the technological age. In this technology race, teachers should be miles ahead from the students if they really want to guide and help them in the vast sea of information found on the Internet.

Teachers should be aware of the kind of skills and thinking abilities students should develop to cope with the new features of electronic texts. The best way to be aware of students' needs, when reading on the Internet, is by self-experiencing those needs as a reader, too. The teacher-reader can explore and find advantages and limitations of digital texts and use them for learner's benefit. Teachers should challenge learners with well-planned and suitable tasks to become literate in the era of electronic texts.

The impact of technology on educational settings is not an unknown topic for a language teacher. We, teachers, must not be blind and deaf to the effect of technology in the classroom. The first impact is on the restatement of concepts such as literacy. Due to the different tools offered by technology, reading and writing are no longer text-based activities; they become complex computer activities instead. The second impact has to do with the way and the content of those new literacies. As the concept of literacy has different definitions, what and how it is taught also needs to be restated.

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