IN TIMES OF MEDIA CONVERGENCE, INCORPORATING WEB 2.0 IN THE CURRICULUM IS THE NEW CHALLENGE TO THE SCHOOLS

Simão Pedro P. MARINHO
Graduate Program in Education
Pontifical Catholic University of Minas Gerais - Brazil
sppm@uol.com.br

Lorena TÁRCIA
University Center of Belo Horizonte - Brazil
lorenatarcia@gmail.com

Cynthia Freitas de OLIVEIRA ENOQUE
University Center of Belo Horizonte - Brazil
cfoe@uai.com.br

Rita Amélia TEIXEIRA VILELA
Graduate Program in Education
Pontifical Catholic University of Minas Gerais - Brazil
rivilela@uol.com.br

Abstract
The multisensorality and the bidirectionality of the communication experienced in present times are beyond the schools border. Despite the fact that our students use media supports in which images, statics or in movement, colors, sounds and texts converge to hybrid languages, as well make possible information sharing in an heterarchical way, the school insists in chalkboard’s monotony and in the teacher’s monophony. New free communication supports are easily available as blogs, podcasts, audiblogs, photoblogs, videoblogs and collaborative writing that can be used in a pedagogical context to make learning better, allowing authorship and sharing. It is enough to have a computer, access to Internet and ideas. This paper intends to be an instrument for reflexive thinking and an invitation for the pedagogical use of those resources, more compatible with students that nowadays are in our classroom and with contemporary society demands.

Keywords: web 2.0, media convergence, internet, digital technology, school, education

ÎN ERA CONVERGENŢEI MEDIA, INCLUDerea WEB 2.0 ÎN PROGRAMĂ ESTE MAREA PROVOCARE A ȘCOLILOR

Abstract
Multisenzorialitatea și bidirecționalitatea comunicării din zilele noastre depășesc cu mult granitele școlii. Studenții noștri folosesc suporturi media în care imagini, statistici sau mișcări, culori, sunete și text converg în limbaje hibrid, și fac totodată posibilă împărțirea de informații într-un mod heterarhic. În pofida acestor realități, școala insistă cu monotonia tablelor pe care scriem cu cretă și cu monofonia profesorului. Noi suporturi gratuite de comunicare sunt ușor accesibile sub forma unor bloguri, podcast-uri, audibloguri, fotobloguri, videobloguri și modalități colaborative de scriere care pot fi folosite într-un context pedagogic pentru a îmbunătăți învățarea, permitând identificarea autorului și colaborarea. E suficient să avem la dispoziție un calculator, acces la internet și idei. Lucrarea de față intenționează să fie un instrument de gândire reflexivă și o invitație de a folosi aceste resurse în scopuri pedagogice, compatibile cu studenții din clasele de azi și cu cerințele societății contemporane.

Cuvinte cheie: web 2.0, convergența media, internet, tehnologie digitală, școală, educație
The intransigence regarding what is new is one of the worst faults of men. And, conversely, understand the reality by unconventional means is what more intensively should be sought [by schools]. Because this is the capacity of invention in its pure state: cultivate the daydream, record their dreams, write poetry, create with lots of images the script of a film that will still be filmed.

(Victor Leonardi, 1999)

A fact that for us seems beyond any doubt: school education is in imbalance with a technology-based society. In a world of multimedia, invaded by sounds and images, with colors in profusion, the school insists in the monotony of chalk’s color and the teacher’s voice. Actually in the twenty-first century we are educating students as if were in nineteenth century.

The debate on the need for the school to expand its jurisdiction to deal with current social demands has been present in the area of education for at least half a century.

In that debate there is clear consensus that the school’s main task is to develop in students the ability to think and make decisions, which means overcoming the school perception as simply being a reproducer of the established knowledge and the linear ways of thinking that strongly marked the education of the XIX and XX centuries.

Thus, the challenge at the school is to work not only with cultural issues, the true mark of a globalised world, but also with the effects and challenges of the revolution operated on scientific knowledge and the advancement and inclusion of new technologies uses. (Costa, 2003)

“*The educational systems must be adapted to the emergence of knowledge societies and the new social, cultural and economic challenges of an increasingly globalized world*” warns UNESCO, recognizing that the educational system must take the maximum advantage of modern information and communication technologies [ICT]. Technology is not a choice. We must remember that technology is actually creating a new world (Unesco, 2005, p. 6).

Multiple sounds and images are resources for the expression that a really contemporary school should incorporate so that students, young people from the Net Generation (Tapscott, 1998), born on an imagetic society, can record their ideas and visions about their own world using different media. With images and sounds, these members of the Information Society, who live surrounded by digital media, will be creating in new contexts, new texts that are not reduced to printed words, even if on a computer screen. These students are expressing their ideas through digital media. They are instruments for them to keep themselves informed, to exchange information and experiences and disseminate facts of their daily lives, in school and beyond. They will use technologies to tell stories and express ideas. These kids will read, reflect, rewrite, always giving meanings and using mainly the internet as a window to the world, to reveal its own world.

However, much of that transformation will only be possible if teachers are ready to make full use of digital technologies of information and communication [DICT], in a school that is always open, rather than having closed computers in inaccessible laboratories, which is a reality in some developing countries. Their minds should also be open, leaving behind at once historical intransigences and the unfounded fear of the new that always come.

---


14 We prefer that expression than the usual "information technologies and communication", ICT, or "new information technologies and communication". The computer now celebrates two decades in our schools; the Internet has been widely used for almost 13 years. Hence, call them new seems a bit unreasonable. The expression we adopt emphasizes the digital aspect digital, on a binary bases, provided by computers.
MEDIA CONVERGENCE

Nicholas Negroponte was the first to call attention to the phenomenon of media convergence, in speeches to raise funds for the construction of a headquarters for the Media Lab, at the Massachusetts Institute of Technology (MIT).

People were amazed with the "revelation" of Negroponte that all communication technologies were passing through a metamorphosis, which could only be understood when properly treated as a single topic. Since then, the term “media convergence” has been used in various - and sometimes confusing - circumstances. For Quinn (2005, p.3), as the beauty is in the eyes of those who see it, the definition of convergence depends on the perspective of each person. Among its features is the fact that it varies from country to country, from culture to culture, from company to company.

Authors such as Grant (2007) have chosen to avoid its use. He argues that it is a phrase with generic sense, each one using it as it best suits, based on experience and individual applications. The solution to that author would be to seek a replacement for each case as collaborative, cross-media, or multimedia platform.

In an attempt to refine the concept, Jenkins (2001) was categorical in stating that there will never be what the industry spread as a single unit transmitter of news and entertainment, like the Dick Tracy watch. But we can not ignore the fact that mobile gadgets are closer and closer to that.

There will never be one black box controlling all media. Rather, thanks to the proliferation of channels and the increasingly ubiquitous nature of computing and communications, we are entering an era where media will be everywhere, and we will use all kinds of media in relation to one another. We will develop new skills for managing information, new structures for transmitting information across channels, and new creative genres that exploit the potentials of those emerging information structures.

(Jenkins, 2001, p.93)

It is necessary to understand that the confusion when using the term “media convergence” happens because, when speaking about it, people refer to at least five processes in progress:

1. technological convergence
2. economic convergence
3. social or organic convergence
4. cultural convergence and
5. global convergence.

To Negroponte (1995), technological convergence is the transformation of atoms in bits, the digitalisation of the contents of all media. It occurs when words, images and sounds are converted into digital information, a phenomenon that expands the potential for integration between them and allows its flow between platforms.

The economic convergence is the horizontal integration in the entertainment industry. A single company, such as America Online, now controls interests in movies, television, books, games, web, in the real estate market and in several other economic sectors. The result has been the restructuring of cultural production around "synergy" and the exploitation of brands in the process of trans or cross-media, as seen in movies like Superman, Harry Potter, Tomb Raider or Star Wars.

The social or organic convergence is the strategy of multitasking consumers to navigate the environment of this new Information Age. Organic convergence, according to Jenkins (2001), happens when a university student watches football on a high-resolution television, plays music on the iPod, types a text or writes an e-mail. Everything at the same time, here and now.

The explosion of new forms of creativity and intersections of the various technologies of media, industries and consumers characterizes the cultural convergence. The media convergence encourages a new culture of popular participation by allowing people to access the tools of
production, archiving, ownership and circulation of content. “Shrewd companies tap this culture to foster consumer loyalty and generate low-cost content”, writes Jenkins (2001).

The Media convergence also encourages transmedia storytelling, the development of content across multiple channels. The more fully consumers exploit the potential of organic convergence, the more content producers will use different ways to communicate various types and levels of information, choosing the media that most appropriately meets the content and the needs of their audience.

Global convergence is defined by Jenkins (2001) as being the cultural hybridity that results from the international circulation of media content. It is the case of music, news agencies and cinema. “The global circulation of Asian popular cinema profoundly shapes Hollywood entertainment. These new forms reflect the experience of being a citizen of the ‘global village’.” (Jenkins, 2001, p.93)

Whether in the form of production or distribution of content, the communications industry is changing and with it the consumer’s habits. Studies made in the United States show the simultaneous use of various media and the increasing popularization in the consumption of content produced by individuals. While the changes are occurring in different rhythms, Pavlik and McIntosh (2005) consider that convergence has transformed the nature of the media as a whole, with dramatic implications in several areas.

In April 2006, those changes were portrayed by one of today's most respected magazines, The Economist. With the title “Among the Audience”, the editorial stated: "The era of mass media is giving space for a personal and participatory media. This will profoundly change the industry, media and society as a whole." (The Economist, 2006a, p.3) The Participation Age is beyond the so-called Internet Age and requires even a new way of thinking the global network, whose initial structure did not anticipate and does not involve the user on a large scale.

[...] even today's broadband infrastructure was built for the previous era, not the coming one. Almost everywhere, download speeds (from the internet to the user) are many times faster than upload speeds (from user to network). This is because the corporate giants that built these pipes assumed that the internet would simply be another distribution pipe for themselves or their partners in the media industry. Even today, they can barely conceive of a scenario in which users might put as much into the network as they take out. (The Economist, 2006a, p.4).

This is exactly what it is starting to happen. The Pew Internet & American Life Project found that 57% of American teenagers create content for the internet—from text to pictures, music and video. That does not mean that people “are writing their own newspapers,” as the engineer of Yahoo, Jeremy Zawodny, told The Economist (2006a). It may be that they are only voting on the quality of a restaurant or a movie that they saw. But it can also mean production of home video of excellent quality.

For the founder of Technorati, David Sifry, the “one-to-many lectures”, as from media companies to their audiences, are being transformed into “conversations” among the people that was formerly known as “the audience”. (The Economist, 2006a, p.4). This new revolution is marked by neologisms. Blog is part of the Webster Dictionary since 2004. The New Oxford American Dictionary adopted podcast in 2005. Wikis, vlogs, metaverse 15 and folksonomies 16 almost certainly will be found in their future editions. All of them are related to the phenomena that occur in cyberspace and have the user as the main actor.

---

15 The metaverse, term coined by science fiction author Neal Stephenson (1992), would be how an Internet based in virtual reality could evolve in the near future.

16 Term used by Thomas Vander Wal to define the collective services as the favorite-sharing sites delicious and flickr.com. The use of online tagging is also classified as “folksonomy” because it creates a distribution classified, or taxonomy, content on the web, increasing its usefulness.
WEB 2.0 AND THE NEW MEDIA PHENOMENON

The digital technology time gives us the impression of flying, it seems much faster than the time for other things. Each time, new features are emerging in the wide network. The phenomenon of Web 2.0 is an example of this: virtual offices; sites for sharing photos, videos, pictures and slide-shows; cooperative/collaborative written works; virtual communities, social networks ... even a virtual Second Life are available.

In 2003, near the end of the "dot.com depression," Dale Dougherty and Tim O'Reilly, founder of O'Reilly Media, publisher and producer of events in the area of digital technology, were in a process of brainstorming when Dougherty coined the term Web 2.0 to refer to the second generation of the internet, characterized by virtual communities and, in particular, by common people sharing what they produce in text, sounds and images. To emphasize the difference of this stage from the precedent, he decided to use the nomenclature adopted by the software industry when launching an upgraded version of their products.

While marketing, the term “Web 2.0” certainly has proved to be a great success. In 2004, O'Reilly and his partner John Battelle began a cycle of annual conferences called “Web 2.0”, which became one of the biggest events of Silicon Valley. The authors, however, are concerned by an improper use of the term.

In Web 1.0, pages are static, not allowing manipulation or alteration of their content by the user. It is a man/machine link based mainly in a limited HTML code. The Web 2.0, on the other hand, concerns a new generation of services and applications responsible for major changes in how people relate to the network and through it.

An important characteristic of the Web 2.0 is the possibility of sharing resources, which means going beyond the possibilities of finding files produced by someone. For example, a group of internet users can write a text or create a slide presentation, in a collaborative ways, which can be accessed at any time by the co-authors, suffice it has a computer with internet access. Calendars can be shared virtually [http://www.google.com/calendar/render] and even draw/sketchs [http://us.ajax13.com/pt/ajaxsketch/index.jsp] in a collaborative web. On sites like Google Docs [http://docs.google.com/], AjaxWrite [http://us.ajax13.com/pt/ajaxwrite/] and ThinkFree [http://www.thinkfreedocs.com/] it is possible to share documents, spreadsheets and slide presentations.

The Web 2.0 is the network in the time of what we call the Authorship Society, where every internet user becomes (co-)author and/or (co-)producer and shares its production with other individuals that are immersed in a cyberculture. Thus, the internet users become no longer just isolated readers or just information collectors; they now work in the creation of large information repositories. This is what Tim Berners-Lee, creator of the WWW, called the “read / write Web”.

The Web 2.0 is based on the content produced by the users and the increasing integration of different sites and services (machine→ machine), which is mixed as if they were one, called mashups. The main code, which would be the emblem of this change, is the Ajax.

Google and Yahoo are now the major drivers of Web 2.0. According to ComScore World Metrix, which maps the hearing of the internet throughout the world, Google received, in January 2007, 502.4 million visits from users/unique visitors; the Yahoo received 467.8 million unique visitors per month. Among the interactive web phenomenon, framed on the principles of Web 2.0, is important to emphasize the components of the blogosphere (blogs, photologs, audiologs and vlogs), the open source tools (slashdot), wikis, podcasting and online radio, YouTube and the sites of relationship or social networks like Orkut [http://www.orkut.com], My Space [http://www.myspace.com] and Facebook [http://www.facebook.com].

17 One example is the SlideShare [http://www.slideshare.net/], where presentations generated with Microsoft PowerPoint, can be published in Flash format. The person who provides the presentation has the option to allow visitors to download the full file in ppt. Another option to share presentations are SlideLive [http://www.slidelive.com] and AuthoStream [http://www.authorstream.com/]

RIS 9 /2008 19
The blogs are gradually turning into a useful and versatile tool for rapid dissemination of information on the web. One of the examples is in electronic journalism. Today, journalists’ blogs are an authoritative form of instant access to breaking news. What will be news tomorrow, printed in newspapers, or at night, on TV, is news now, immediately after the fact, in blogs.

Blog is the current name for what was called a weblog, a term coined in 1997 by Jorn Barger, editor of the Robot Wisdom Weblog. Weblog came from “web” + “log”. In summary, it would be a way to make records in the vast global network of computers.

Initially, the weblog was used to record sites visited, as a daily travel register. Then it became what we could consider the electronic version of the diary, a form of registration adopted some time ago, especially by teenagers and those who kept daily reflections and thoughts more sheepish, generally inaccessible to others. Now, in time of post-modernity, when the boundaries between public and private are increasingly tenuous, the public exposure of what is personal, through the blog, involves more and more people, especially young people.

The blog can be considered as one category of social software. Social software is defined as a tool, to increase human social and collaborative skills, as a mean, to facilitate social connections and exchange of information, and as an ecology, allowing a "system of people, practices, values and technologies in a particular local environment" (Suter; Alexander; Kaplan, 2005).

Social software is a new wave of digital technologies in information and communication that allows the preparation of students to participate in networks in which knowledge is shared and built collectively (Mejias, 2006).

A collection of posts, with title and date, exhibited in a reverse chronological order, with links [usually every post has at least one] to other blogs or other sites on the internet is what characterizes a blog. Each post has still room for comments that may be made by any reader of the blog.

The blogs today, on account of the progress of digital technologies, incorporate several resources. Its author is no longer required to use only the texts to record ideas, thoughts or to make reports. Image [photos or videos] and sounds can be incorporated. There are blogs made only by photos [photoblogs], sounds [audioblogs, which are suited to the podcasts] and videos [videoblogs]. Some sites host resources in the construction of personal "spaces" enabling the convergence of media: text, images and sounds in one place, such as Multiply [http://www.multiply.com] and Ning [http://www.ning.com]. The Ning, whose online access is free, allows the creation and maintenance of social networks in cyberspace. It has resources that go beyond the simple posts, allowing photos, videos and sound sharing and discussion forums.

In the beginning, a weblog construction required the knowledge of HTML programming and a hosting service where the posts [web pages] could be stored. Then came sites dedicated to blogs, most of them free. Those blogs services incorporate software [or an engine] that allows posting without the user having to know HTML programming; it works on the basis of a natural language in a very simple and interactive interface.

The current systems for blogging, the blogware, remember a text processor, like the famous MS Word. The user must simply sign-in, using login and password, and write, or "to blog". It is very easy to include links and images, and, with a button pressed, the post becomes public. The author of the blog, called "blogger", can also edit old posts or delete them easily. One advantage of the blog today, is the fact that anyone can create one, since the technology used is very simple. Simply access the internet, registry in one of the many services available [most free, such as Blogger and WordPress] and have the ideas that will feed the posts. The blogging, coming easy and free for users, certainly helped the explosion of blogs. In April 2007, according to technorati.com, the so-called "blogosphere" was comprised of approximately 70 million blogs, with the creation of 120 thousand new every day, throughout the world.

---

This is a service on-line tracking of blogs.
In short, blog is a way for people to communicate with each other, having it as point of convergence of their interests or simple curiosity. They are, today, part of a growing combination of tools of personnel communication and information. Even some blogs, mostly of journalists, mark a new instantaneous way to do journalism, including citizen journalism\(^\text{19}\), where individuals can lay an active role in the process of collecting, reporting, analyzing and disseminating news.

Certainly the emergence of the community blogs, apparently a counter-sense to the idea that the blog was a personal diary, became a clearer way of collaborative writing. In community blogs - written under the co-authors regimen - each of its authors can post. Thus, their active participation is not limited to the comment of outside posts. The co-authors may even change posts created by other co-authors, or delete them if the system configuration allows.

The blog, a space for collaborative production with not static content since are updated daily and sometimes more than once on the same day, could be recognized by school as a useful resource for the integration of writing with reading and considered as an important strategy in their training activities involving digital technologies.

At school, the blogs can serve to various purposes. They may be the school portal or the space of actions disclosure or specific projects, e-portfolio of teachers and students and even resources or strategies in the management of the school. The options are many, of course.

For Richardson (2006), there are several aspects in which blogs constitute an element of interest to school use. Some reasons are:

1. it is a constructivist tool for learning;
2. there is a potential audience for the blog which goes beyond the limits of school, so that students relevant production can go far beyond classroom;
3. is a resource that supports files made by students and teachers;
4. is a democratic tool that supports several styles of writing and
5. may encourage the development of competence in certain topics when students are focusing on reading and/or writing a topic.

Seven reasons for a teacher to create a blog were listed by von Staa (2005):

1. it is fun
2. it approaches the teachers to their students
3. it allows reflections on their own placements, and we can add, offers to others, through their comments, the opportunity to contribute to this debate
4. connects with the world we live on
5. extends the classroom and, why not say, also the time to teach and learn
6. allows the exchange of experience with co-workers and
7. gives visibility to their work.

And we add a new reason: it would be a good strategy for the teacher to insert himself in an active way in the vast network, building a culture of use of Web 2.0 resources. If the teachers become familiar with this blogs, they will be feeling much more comfortable for using digital technologies in the teaching-learning processes, facilitating the work with their students.

A blog can be a strategy to

1. promote critical and analytical thinking
2. stimulate the creative, intuitive and associative thinking
3. allow the analogical thought
4. increase the possibilities of access to quality information and
5. combine the best of the solitary reflection and social interaction (Eide Neurolearning Blog, 2005), in an exercise of collective intelligence (Lévy, 1998).

The blogs, as many of the newest internet resources, were not made to school. But today it seems to be one an obligation for teachers and managers to think about alternatives to their use in education.

---

\(^{19}\) Some examples are CJReport [http://www.cjreport.com/] and SourceWatch [http://www.sourcewatch.org/]
Because of teachers who think and do their jobs in a different ways, proposing to try/test new alternatives for education, particularly with the use of digital technologies, rich experiences are emerging and combine the DICT with forms of education that require to the students to be active, leaving the passivity actually cultivated in our school. An interesting example is the use of a community blog as a form of linguistic-cognitive interaction by students from elementary school, with the purpose of narrative texts construction, in a collaborative way (Franco, 2005). Some teachers create community blogs for registering, daily, the progress of a project. In that kind of blog students can organize as snapshots newspapers, with stories on subjects that are being studied in the classroom.

Educational blogs are seen by Glogoff (2005) as an instructional tool focused on learning. As an activity focused on students, blogs allow them to build capacity to act both individually and in groups, attributes that are nowadays recognized as important, even as crucial to people in the contemporary society.

By bearing the written language, blogs enable the effective exercise of all the steps of language construction, as the draft, editing, organization, pre-written, the reading of the evidence, the publication and review. Students can - or should - initially produce draft of their posts. It is possible, by the blog providers, to save drafts before posting on the blog. In the draft students transfer their thoughts in writing, that can be sentences, paragraphs or even a complete essay. The errors can be detected and corrections provided before the post becomes public. The posts can then be edited, to review content in addition, removing or modifying texts. The reading of the "proof" to check spelling and grammatical errors, any problems on the links and adequacy of images can and should be made. Finally, the text would be published, error-free and ready to be read by the audience to which it is intended.

The blogs became an important tool for collaborative writing. Since the reader has the potential to add information through comments, for many it means a form of collaboration, especially because the posts and messages associated with it can be seen by other readers.

Some attention is essential, however, when starting a school project involving the use of blogs. As a first step, the suggestion is that each teacher must know the school's policy on the use of internet resources by students. Possibly, it will require a permission of the students’ families to publish their names in the network, especially if the full name\textsuperscript{20} and photos\textsuperscript{21} will be used. In that case, the recommendation is to make a previous contact with the students’ parents, personally or through another form of communication [e-mail, for example] to explain the project and its elements.

Rules of behavior, like an etiquette policy to work on the network, must also be defined, preferably with the students. Of course, the teacher should expect pupils to exercise creativity but cannot accept that strange issues, outside the context of the project, be addressed. And all care should be taken since the blog is a public resource, with easy and broad access. In this case, the teacher would have the right to control what students may or may not publish on the internet.

Blogs would also allow what is being called connective writing. It requires careful reading of the author and criticism, clarity and consistency in the construction of its text, which is linked/connected to sources of the expressed ideas (Richardson, 2006).

The connective writing in blogs requires going far beyond what characterizes the simple post. From the connective writing perspective, according to Richardson (2006), to post a text or links, to make a diary and establish links with descriptive notes would not be doing blog, although the last example can be close to it depending on the depth of description. The simplest way of blogging would be to place links accompanied by an analysis that brings the meaning of the "linked" content. Another simple way of blogging would be the reflexive writing, metacognitive about practices, but without links.

\textsuperscript{20} The ideal is to avoid the complete name.

\textsuperscript{21} It is recommended to use group photos, without individual identification.
The real way to make blog, written in a context of connectivity, occurs when links with summaries and analyses that articulate a deeper understanding of the issue being linked are suggested by the students. When the analysis and synthesis are built from posts, links and prior comments during a longer period of time, the way to make the blog would be considered the most complex.

Of course, this stage of blog as connective written is very hard to be achieved by the students at the beginning, especially in basic education. The school should choose initially simplest strategy, basically those that, according to Richardson (2006), were not in fact a blog written in the connective perspective. With the first steps consolidated, teachers and students could then go ahead with the prospect of building more complex blogs.

**PODCAST AND AUDIOBLOG**

The term Podcast came from the junction of Ipod, the MPE player from Apple Computers, and broadcasting. The word was first used in 2004 by journalist Well Hammersley in an article for the London newspaper The Guardian. It refers to audio files stored on any digital format (MP3, OGG and MP4) and made available on the internet that can be "signed" with the RSS technology, existing in multiple sites and downloaded to the computers of "subscribers", without having to go to the producers’ websites. The files are stored on a server on the internet and through the RSS feed, which provides information on the programmes available, will be automatically downloaded to the user’s computer, where they can be executed, transferred to portable MP3 players or even burned in a CD or DVD.

The audioblog is after all a blog. But, instead of posts based on text, the author publishes audio files. For some people, the audioblog is the same as the podcast. Others suggest a crucial difference: to have access to [audio] files from audioblogging one must access the blog in which they are available. In the case of the podcast, although the option of access to the site exists, it is possible to receive the new files automatically by the use of the RSS feed.

Generating contents for podcast or radioblog is technically simple. The audio can be recorded directly into a computer or a digital audio recorder can be used. Then, the files are edited. And after the file is ready, it is only necessary to have a server to where the files will be uploaded. They can be multimedia blogs, such as Ning [http://www.ning.com] and Multiply [http://www.multiplying.com] or specific providers for podcast, mostly free, as Podcast [http://podcast.com/], the PodOmatic [http://podomatic.com/] and PodBean [http://www.podbean.com/]

Podcast or audioblog are strategies that schools can use to understand their students and other forms of media possible in education (Menta, Barros, 2006; Barros, Menta, 2007). With the use of technological support, the school could create a kind of virtual radio that, by working directly on the internet, does not require costly equipment to transmit and license from the government. In that online radio, students and teachers can make public the production of several collective projects.

Projects could use recorded interviews, for example, with the use of VOIP, available free on the web, as well as parodies, music and reports on various themes or issues, raised by the students that would be available in audio for broad access.

**VÍDEOS**

In general, school experiences with movies and videos were and still are very poor. Practically, videos are exhibited in VCR and, more recently, on DVD. Very often, the videos appear in situations that make students to believe that their teachers, not wanting to give lessons, trick them with a movie.

Although the school have been housing generations that spent much of their time in front a TV, the use of movie or video camera for the production of audiovisual by the students generally

---

22 A good option for digital sound editing software is Audacity, available, for free, from http://audacity.sourceforge.net/.
always have been a problem. Problem because teachers in general, have no training to deal with those resources: very few knew how to run an old 16 mm projector. With the arrival of the VCR, things became a little less complicated, because this equipment also arrived at the teachers home.

Production was also a problem. At the time of acetate films, 8 or 16 mm, expensive equipments were required, inputs [films and revelation] represent a high cost; audio tracks recording was complex and required too much time and a appropriate equipment. All that was enough reason for the school become only an “exhibition room”, not a “pedagogical Hollywood”, with students being actors, directors and producers. The hegemonic thought was that making a movie was a task only for filmmakers and their crew, a job fo the entertainment industry.

With the advent of the VCR, in fact there was a simplification for the production of video. Picture and audio were recorded together. The equipment, although initially expensive, represented a minor financial investment. The tapes could be reused, unlike the acetate films [non-used scenes meant wasted material and lost money]. The video editing required another VCR attached, but it no longer represented such a high cost. However, if some of the financial costs problems were resolved, there were still excuses and reasons for the school do not incorporate that resource for allowing students to express their ideas and visions of world with the use of moving images. And, of course, teachers also lacked training to use that technology.

With the technology advancement, expensive video cameras are no longer required for anyone to create short movies. Suddenly, thanks to mobile phones\textsuperscript{23}, the ability to produce home or amateur video became a reality for many. Despite the lack of optical quality, the possibility of registering the dynamics of the day-by-day is a fact. There are even festivals for such productions.

The emergence of sites for publishing and sharing videos, whose icon is YouTube, certainly is catalyst for cheap amateur productions. Now digital video recorders are relatively accessible and easily pluggable to computers. With free software, such as VideoSpin, it is possible to quickly edit a simple video without compromising the visual and sound effects. For us, this is a good reason for the school to think about how to incorporate this form of expression.

And if neither in a video camera the school wants to spent money, the students' mobile phones, devices that today are considered a trouble in classrooms, can be the machine to register their visions of the world, a tool for new language. Virtually eliminated the cost problem of making movies in school, students will not be expressing themselves through images in motion only if the school and, specially, the teachers do not want it.

THE ONLINE COLLECTIVE WRITING

The advent and development of digital technologies are providing ways of writing and reading quite different from the ones that marked the teaching practices of a few years ago. Among them are the online cooperative and collaborative writing, practices supported by digital network-connected tools, which require new concepts and pedagogical postures. These are ways of writing that find references in the socio-interactionism, whose precepts show symbolic, instrumental and social mediation instance as conditions for the development of higher psychological processes.

Regarding the instrumental aspect, the online writing platforms have the support of collective text edition based on Web 2.0 and wiki. These environments are characterized not only by the opening to multiple interventions, but also for portability, usability, gratuity, ability to manage product and process and relativization of space-time. These features make the ICT learning spaces that enable pedagogical experiences hardly reproducible in presentia situations.

Wiki is one of the alternatives for online collective writing. The icon of this feature is the famous Wikipedia, an universal encyclopedia, built on a collaborative way by those who want to contribute\textsuperscript{24}. Wikipedia already has versions in ten languages. This contribution space is a

\textsuperscript{23} The school should focus attention on technologies such as mobile phones. They tend to occupy more space in society and, almost consequently, in school. Recent indicators show that the market for personal computers in Japan is shrinking. Consumers are replacing the PC for mobile phones and game consoles, which connect to the Internet

\textsuperscript{24} A Sciences teacher, stimulated by us, has put contributing to Wikipedia as a task for her students. She sought missing input on matters relating to the human body in that Encyclopedia. Her students, using books and other sources of
repository of information to be processed into knowledge by collective intelligence that feeds it and serves from it.

Technically speaking, the words wiki and WikiWiki are used to identify a specific type of hypertext documents or the collaborative software used to create it. Wiki wiki means super-fast in the Hawaiian language. In maori, Wiki means week-end. It is also the diminutive way of Wikitoria, Maori version of the popular Christian name Victoria.

The wiki is therefore an online tool for the collaborative creation of pages in the Internet. What characterizes this resource is the easy way of editing and easy access, which requires only an internet browser, not demanding the installation of any software. Through it, the user can create a new document or edit existing one, correct errors of information, ideas and enter new additional information in a collective, interactive and intuitive way.

Wikis make an historical record of text changes and allow following the evolution of content creation. Not rarely wikis have a space for discussion, allowing the co-authors of the text to debate before making any amendments.

Several experiences in the use of educational wiki reveal rich possibilities in collaborative projects. Fagundes (2005) quotes projects of democratic education involving educators, where there is the use of wiki in the organization of information from school as reports of children development, and the construction of a student’s portfolio in a distance learning course.

In addition to the wiki, there are a variety of so-called collective text publishers, tools that allow the collaborative or cooperative writing of texts. Easy to use, these platforms also require only Internet browsers, generally at no cost. Among them, we can point Writeboard [http://www.writeboard.com], Thinkfree [http://www.thinkfree.com/], Ajaxwrite [http://us.ajax13.com/en/ajaxwrite/] and Google Docs [http://docs.google.com/].

All those publishers have their limitations and advantages. It is noteworthy at least one of the advantages of this feature: the ability to see not only the text, but also the writing process, something that would allow to the teacher a full review of the procedural work. Because they are numerous and diverse, it is important that the teacher choose the tool that best suit the needs of the task of writing, the settings of the machines available, and the proficiency of students in digital technologies.

According to Enoque (2008), some aspects should be observed when selecting an editor of collective texts. In particular, there is a need for an appeal of perception which allows a comparison between textual versions, organized in chronological order, including the author's name, changes implemented, with date and time.

There is also the need for pre-establishing a tool for communication, easily recognizable and near the text editing area. The forum, that being asynchronous provides almost an online diary, would be an ideal space for negotiations in group writing activities, implemented via the network. In addition, the platform should have more than one way of communication, if possible one synchronous and another asynchronous, as well as the possibility of communication in private or a collective way.

As the area of writing itself, it is desirable that it closely resembles, to the maximum, the text processors that are commonly used by students. The objective is that the tool does not become an obstacle to the smooth progress of the activity, since we cannot always count on students proficiency in the use of digital technologies.

Finally, collective text publishers must rely on resources to encourage the basic steps of text construction.

Regarding the linguistic and social aspect, the collective text publishers, and the practice that provide, the cooperative writing, contemplate two social instances that historically have been superficially treated by the school: the language, as an space for construction of knowledge, and the society, as a way to validate it. The language was traditionally conceived as a reflection of the information, wrote entries, accompanied by a language teacher in order to ensure a grammatically correct writing and spelling. Texts ready and approved, guaranteed the accuracy and quality of information, the entries on Wikipedia were loaded. That task, reported the Science teacher, contributed to elevate students self-esteem.
world and the thought and as a communication tool. As a result, it is still worked in schools as an element that lends itself to dissection, and that to be used with proficiency, must be memorized.

In collective text publishers, however, the language may be a symbolic space for negotiations, rebuttal, agreements and social remaining. That's because - as plan, implement and edit a document - students involved in a situation of collective writing also practice the use of language for negotiation and exchange of ideas about the semantics and formal aspects of the text.

Moreover, cooperative writing includes the Vygotsky’s Zone of Proximal Development, enabling more proficient students to help the others on learning that not come about in a lonely way. The result sets up not only by the cognitive development of students, but also by the exercise of cooperative habit, which encourages the motivation for participation, the awakening of deference between partners as well as the sense of joint responsibility for something common.

This practice has been proved important also, for a significant learning about the issues treated in the text. This is an activity in which the student is active, the content will be worked more easily than if it were simply verbalized in a classroom.

It's a fact, however, that cooperative writing online is a complex practice, difficult to achieve. Work of this nature requires more time and dedication by teachers, something that is sometimes incompatible with the "school time".

On the other hand, if the teacher proposal is and authentic pedagogic work, based on cognitive and human growth of the students, it is worth opening up to this new educational opportunity. And when the Distance Education, based on digital technologies, become irreversible, it is going to be necessary to know these new features, attitudes, relationships, educational and, why not say, social predispositions.

AS IF IT WAS POSSIBLE TO CONCLUDE

As well Tárcia (2006) registers, "convergence of media and education are part of the same reality, the digital world, where data and information run through the web veins, formatting new models of communication and new audiences." And among this new new public are the new students of the twenty-first century school. But it will not be enough to students to be spectators of wonderful pieces produced with the assistance of these new technologies. New roles will be designated for them.

And talking about roles reminds us the vision, disseminated at least in speeches, of the students as school’s actors. But if we have a closer look, they often are only representing a role according to scripts written by others for them. We believe that, more than ever, it is time for the students also become authors.

On the other hand, after the Web 2.0 or more precisely because of it, it begins to speak about School 2.0, Education 2.0 and Pedagogy 2.0 (Grosseck, 2007). These expressions point to the urgent need to (re)consider the role of school in a new time, the Digital Age. It is time for a school become capable of offering a participatory learning, making use of Internet resources so that students can, in fact, build knowledge and, in what seems to be essential for us, exercise authorship, in a concrete autonomy.

John Seely Brown, former chief scientist of the Palo Alto Research Center, in article published by Cɪ_Net News (LaMonica, 2006), argued that education is suffering a large-scale transformation towards a more participatory form of learning. If in fact that transformation happens and its speed and intensity is controversial issue. But the need, and hence the challenge, is that schools can offer such education.

According to Brown, rather than consider the school education as a transference of knowledge of teachers, specialists, for students, receptacles, educators should consider alternatives to hands-on and various types of informal learning, favored in environments marked by digital technologies. Those methods, Brown believes, are much closer to apprentice in a multi-layered approach that is quite different from the formal education that has been offered by schools for a long time.
It is undeniable that the Internet is contributing to the transformation of the mass media model, where information is distributed from specialists to consumers. A new reality is forged, with people creating online content. Among these new digital content producers certainly are many students from our basic education schools. And the number of them tend to rise, perhaps at a speed with the mark of digital technologies.

Because of Internet and the potential that it offers - and certainly new ones will come - very soon the schools, even in the so-called face-to-face education, will have their strategies for teaching and learning where there is a computer with internet access.

The applications and resources that make up what is called Web 2.0 shall have a major impact on schools that use digital technology resources in times of media convergence. But certainly the potential impacts of Web 2.0 resources will not be limited to online education, in virtual classroom, built with bits. They can - or should - also have implications over face-to-face education, in the old brick wall classroom.

The interfaces of Web 2.0 will almost certainly deeply influence the environments of teaching. After all, many of them already are, in fact, affecting the lives of students outside the school. And coming to the school, and being incorporated into the curriculum, those interfaces will challenge teachers, will ask for different ways of teaching, for new strategies for learning, since there is no meaning in using DICT in a pedagogy that comes from the XIX Century.

Several features of Web 2.0 are being brought into the school by students, since they are elements of their daily lives. This is the case of blogs, online encyclopedias, photos, audio and videos sharing services and virtual communities.

Nowadays there is a strong tendency for the organization of collaborative learning environments, with the growth of networks, which to some extent decentralize the processes of teaching and learning by advancing beyond the walls of the school, overcoming them, and creating a new dimension for the school time. Consequently, the contents to be treated, the possibilities of interaction, issues such as individual and collective authorship, the distinction between public and private should be (re)designed by educators. The ability of critical analysis, the ethics, the individual and collective value and moral issues will be some of the elements required in a new "cocktail" to make education that goes beyond cyberspace technologies and make the school contemporary of a technology-based society. This (re)thinking is going to articulate with a necessary resignification of what would be to teach and to learn in a XXI Century school. This should be incorporated in the political review and educational projects, needed to make the contemporary school of current society. It seems reasonable to assume that at least in one line of the texts of these projects, a school - which has always embraced the instrucionism and more recently turned its eyes to constructivism/cognitivism and that should already be seeking the constructionism - appears the word "conectivism", a theory of learning for the Digital Age proposed by Siemens (2004).

And yet there are those resources that will be useful in school management and the integrated work of teachers, which could or should abandon the solitude, inherent in the teaching profession.

In addition to all this, in what already brings many challenges to school, administrators and teachers, there is a misunderstanding on the part of some people, who tend to consider that would be non-digital included individuals from disadvantaged social classes who do not have computer and Internet at home. But what we see in developing countries like Brazil are these young people migrating to the LAN houses. There, they become Internet users, they surf the web, exchange messages and perform their authorship. But in those game houses, which now also serve for many tasks related to information technology, it lacks an essential character in training for the cyberculture, the teacher. Hence, the school also needs to take the responsibility for being to be an important space for the digital insertion, needed in the education of new citizens. The school should be the gateway to cyberculture. And to exercise that role, to have computer is not enough. The school will have to rely on teachers who, while digital immigrants, adopt the DICT and are immersed in cyberculture, which means going beyond the mere digital or technological inclusion.
The incorporation of these technologies and media will be made in an integrated way with a revisited curriculum (Marinho, 2006), allowing an innovation that is going to become viable and, especially, is going to be supported by students, teachers and administrators. It will be a rich and effective exercise of co-authorship that may turn into the project of a school in the Knowledge Society.

Certainly it will not be easy to be a teacher in times when the digital technologies spread, convergence of media, Web 2.0 and Web 3.0, the semantic web, which is already approaching, and others that surely will come.

As Valente (2005, p.30) warns, the integration of media is "another revolution that educators will have to face without having fully digested what the new technologies have to offer." And if the incorporation of the computer, by itself, already constituted a major challenge to many teachers (Marinho, 2002), dealing with various media, in a context of Web 2.0, will be something new to be faced.

What increases the challenge is the absence or disability of the use of computers and associated technologies in pre-service teacher education. The computer is the great absent from the classroom among undergraduates. A significant majority of our pre-service teacher education programs do not use this technology when training future teachers and also do not prepare them to use it with their own students. Surely it is missing a desirable approach to innovative teaching practices, including those that incorporate technologies, needed to “upgrade” teachers so they can make the XXI Century education (Marinho, 2007b).

Certainly, the use of computers as a resource in education will be easier if the school adopts new ways for teaching, being far from a traditional and hegemonic education model, based on the teacher voice and the silence of the students (Marinho, 2007a). But if teachers seek to get involved with the DICT they will have more chance of achieving success in the task of educating and training, with quality, children and young multimedantics in the twenty-first century. And teachers must be available for run risks.

To signalize and to defend the possibility that new forms of use of computers will be favorable to actual education should not be understood as an attitude of specialists in the area. The current debate held in the area of curriculum mobilizes educators whom, at the same time of seeking to unravel the problems and challenges of the contemporary school, advocate the need for restructuring the school life, guided by the belief that the school needs to pursue new forms of relationships with social life. From this perspective, we must consider that new technologies do not compete with the school (Vilela, 2007) and we must keep in mind that it will be very difficult to keep students 2.0 in a school 1.0. That can be an inconvenient co-existence.

The school must seek to be related to what is real in their student’s social life, aware that a growing diversity of possibilities for the use of computers as educational tool can not be underestimated. Thus, develop the proficiency for using computers as an educational tool can create conditions for changes in the climate of suspicion around this skill. Instead of competition with traditional school practices, the computer could be an effective tool for citizen education, in a new century.

REFERENCES