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Librarians and basic education teachers in the context of the "digital literacy"

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I will present some thoughts on the role of libraries in the so-called "digital literacy" context. I will try, from the start, to question this name – "digital literacy" –, by trying to reveal what is hidden behind a name everybody seems to accept, without further questioning. I will deal with the role of libraries in school performance, specifically focusing basic tuition and badly developed countries, which help to enlarge the so-called "digital gap".

I will always wonder, regarding the most popular slogans, what are we talking about?

Before I start, it would be convenient to justify the approach chosen. Of all the professions involved with the production, circulation, cataloguing and distribution of written messages, probably the library community is the one which has better reacted to technological changes. On the other hand, school as an institution shows all kinds of fears and reticence, and abruptly shifts from locking up the few computers available, to claiming for more machines, as magical agents for the promotion of new learning.

I shall speak of education as a social institution, formally organized. Of course, I am aware that school is far from being the only educational environment, but in these times there are phenomena which have magnified the "school effect": on the one hand, the entrance age has become progressively lower – in highly developed countries, practically all kids attend school by the age of three (and other countries pass laws to this same end, without actually analyzing the feasibility of such laws). On the other hand, the so-called mandatory basic education has been extended to the age of 15, absorbing part of what before was called "secondary school, or second grade school". Also, the growing importance of diplomas is such, that it justifies the recent and controversial declaration by the OCDE ("Organización para la Cooperación y el Desarrollo Económicos" – Economic Development and Cooperation Organization), saying that education has become "a service which is an object of commerce".

For obvious reasons, I am not going to talk about high education. At that level, intensive use of new technologies is evident, whether at online courses level, or in the renewal of libraries, research networks working jointly in several countries, transmittal of specialized techniques by means of virtual reality, and a long list of etceteras.

I will focus my presentation in the existing tension between libraries and librarians linked to the less sophisticated users on the one hand, and mandatory school and teachers on the other. Both institutions and professions are summoned to help achieve the "digital literacy".

First things first.

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PCs are already 20 years old (I am speaking of PCs, not of computers). 20 years ago, computing was massively incorporated to work and, right away, homes.

The idea of a "personal computer" seemed unusual at the beginning. Twenty years later, we speak very naturally about the computer at home, at my office, my notebook. That is to say, we think it is natural for a person to have three different computers, for uses that partially coincide.

Ten years ago, a computer could be inherited. Nowadays, youngsters in the family ask for powerful processors and high speed. The adults' computers are no longer inheritable. Recycling of computers – for obvious market economy reasons – is underdeveloped and, to my knowledge, limited to a few NGOs supporting the wrongly called "Third World", and to some computing projects of a few countries.

We already have, at basic education level, "computerized kids", as before we used to have "television kids". By this I mean: kids who were born and grew up knowing this technology was present in society. For some, that technology existed and was visible at their homes (though not necessarily available to them). For other (the great majority) it was one of the many technologies that are object of desire, but out of reach. In both cases, and this is what I am concerned with, they were born with this technology already installed in society. It is not the same to see a certain technology coming to life, as being born with it already there. All those present here, at least most of us, and in spite of the obvious age difference, belong to the generation that watched this technology "coming to life". Ours is the surprise, the amazement, the not knowing if "that" would be an object of curiosity or necessity; later, there was the compulsory learning, and now, the realization that we have established a new technological dependency relationship, so far unknown to us.

None of this for the computerized kids of the new generation. To them, sending a message to the other end of the world by pressing a key is as normal as it is to us making a phone call by means of a series of numbers. The verb "to dial" slowly disappeared from our vocabulary, as phone round dials were replaced by keys. The new computerized kids never "dialed" and, very rapidly, they "chatted".

To this new generation, the verb "to communicate" means making a phone call (preferably, on a cell phone), or chatting. The verb "to communicate" no longer spontaneously conveys the idea of writing on paper. Lets bear this in mind.

When the new computerized kids are mentioned, we tend to think of youths. However, there already are kids 5 or 6 years old, who make use of interpretative patterns in order to understand the social world, and to create expectations over the behavior of cultural objects, which are built from "computerized knowledge", as incipient as this could be.

I am thinking of these children and youths. In the first place, those from Latin America, because it is the region I come from. Some of these children and youths have first-hand knowledge, because there is a PC at home, while others have a very poor social knowledge, with little, scarce or no direct

contact. However, lets not ignore certain indicators: there are Internet Cafes beside the bakery, both in poor districts and tourist resorts; the use of cells phone is now available for less qualified jobs (for example, an engineer or architect gives it to his workers, so as to control the works at a distance; truck drivers must also have them when on the road, for control); TV series and movies often show characters using PCs; the usual attitude of a bank employee or a hotel or airline receptionist, or even a supermarket cashier, is not to look at the client, but at the computer screen. (In Spanish, depending on which country you live in, the computer can be considered a male or female noun – there being no neutral pronoun like "it". Which gender should it be considered?)

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We are witnessing a revolution in the practices related to the production, use and publicizing of the written text. This is undeniable. Said revolution was prepared by writing by means of a keyboard, an invention that has been available since 1874, when the Remington company (weapon manufacturer), offered in the market the first typing machines.

Writing by means of a keyboard is over a century old. But the keyboard becomes a privileged writing method when it is associated to a computer. This is very interesting, because is shows that, sometimes, there is a considerable time gap between the availability of a certain technology and its social impact.

How long did some of the recent communication techniques take to become popular?

In its 1999 report, UNDP gives the following information:

The radio took 38 years to finally have 50 million users.
TV took 13 years to reach the same number of users.
Internet reached that figure in only 4 years.

(Computers, Internet's fundamental support, took 16 years to reach 50 million users.)

Of course, ITC (usual abbreviation for Information Technologies and Communication) are much more than a keyboard. But they incorporate the keyboard, and this is not always emphasized. I think it is important, because over the last few years, writing by means of a keyboard has shifted from being a job to being part of the "writer's skills", which no one considers as a transmitting instance.

In the past, the keyboard defined a specific learning instance called "typewriting". Today, no private institute – nor even the lowest quality ones – promotes "typewriting". The school does not tackle this – because it never considered the keyboard as a writing element. We seem to assume that it is the same to face the computer's keyboard with two hands and ten fingers, than with a few fingers, always combining this with the mouse.

However, it is not the same. Having the eyes shift between the screen and the keyboard only multiplies mistakes, and makes people prefer the mouse to the keyboard, which leads to underrating the huge advantages this keyboard has associated to a word processor.

Of course, the computer revolution is much more than writing by means of a keyboard. The main issue is that everything changes at the same time: *the text production method, the text circulation method, and the material of the supporting objects of written signs.*

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Current production methods involve a concentration of tasks on one single person, which before were divided into several specialized jobs. At one point in history, in classic antiquity and great part of the middle Ages, the work of an author and scribe were dissociated. The author of the text was not the author of the signs; the author of the signs carried out a manual job. For the text to circulate, the

copyists had take part in the process. If the text needed any particular graphics, a new character would also intervene: the illuminator.

As technology improved and advanced (technology for the preparation of surfaces and for the instruments to make the signs – i.e., writing – on those surfaces), the author of the texts and the author of the signs became one single person.

But for the circulation of the texts, many different types of professionals had to take part of the process, with very different skills. As centuries went by, all those publishing professionals were grouped under a publishing house name. Now, for the first time, the time is ripe for the disappearance of all those characters. (I am not saying they will actually disappear, but that there is a possibility of their disappearing that concerns them … especially after the Stephen King episode, which in 2000 gave publishers the creeps).

Nowadays, for the first time, an author can be his own editor/publisher: first, because he can give his text a graphic format at will (including the addition of sounds and moving images); second, because he can distribute his text through Internet. (It is more difficult that he will get any financial income through this distribution, but that is another problem, related to copyright, of which I will not speak).

From the monastic organization of copyists, to the mercantile organization of publishing after the press was created, there is a quality leap. Another quality leap is taking place now, and it shouldn't be disregarded. The text production and distribution methods change completely in each of these periods.

The ideas of "work unity" and "author identity" are also changing, which we had got used to as of modern age. Both are closely related to a material support that helps to make such notions intangible. Even though the title page has included the author's page since the 17th century, the juridical status of author would only be acknowledged by the late 18th century. As strong as such idea of author may seem to us, it has only been strongly established for two centuries. The idea of author "is not a medieval idea".[1]

In terms of social practices related to the written text, what is new and what is a return to past times? On screen, the texts scroll vertically. This vertical shifting text is, in a certain way, a return to the scroll (prior to the codex). There is nothing similar to the gesture of "leafing through" in the new technologies, a gesture caused by the joint pages of the codex. The text's instability can be conceived as a return to medieval practices, as well as authorship's frailty. Before the press, there was no necessary subject matter unity in the codices. On the contrary, the usual codex content were anthologies, a group of texts brought together for different reasons, without a necessary topic unity. The loss of a subject matter unity would not be then an attack on books, but a return to the codex prior to the press. Historically considered, then, the ITC acquire a new dimension. The exercise is not useless, and will have consequences, as we shall see.[2]

Is the relation between images and text completely new? Yes, because it is possible to add an image to a text, as easily as never before. Yes, because it is possible to tackle a text as an image, and digitalize both. However, we should not exaggerate. Since Medieval times, and very strongly since the Enlightenment, images go with texts and sometimes replace them. (After all, during the conquest of America, Catholic doctrine was often transmitted by means of images, as shown by the Catechism in pictograms by Friar Pedro de Gante, inspired in the pre Hispanic Mexico codices[3]).

Are we witnessing then an improvement, disappearance, or rupture of linearity? Once again, what are we talking about? Searching for information in a book, a dictionary, and encyclopedia, a phone directory, or whatever, was never linear. It was always a process of going to and fro, gathering information bits "in leaps and bounds" and, with that fragmented information, making decisions. But the moment the required information has been found, and if that information appears in the shape of continuous written text, as brief as it might be, reading is linear. Internet circulates texts without transforming them into non-texts.

Are there resources available that might allow the addition into writing of elements that were absent from alphabetical writing? Sure. But this is not totally new either. Commercial advertising has explored many of these resources very long ago.

The newest thing is, maybe, the possibility of fragmentation, with everything this entails. Video experimented fragmentation and superimposition of images with great success. The remote control gave users, particularly youths, the possibility of changing channels or tracks rapidly and continuously, with a minimum exploration of visual image or sound stimuli. Computer resources allow us to fragment and superimpose images and texts at will. Maybe, without our knowing it, we are witnesses to new text aesthetics, where the traditional analysis in terms of coherence and cohesion no longer make sense. I cannot assure this. But I am convinced that some peripheral technologies – such as the remote control – have had a stronger impact on new generations than expected at first.

We must remember that together with the juridical acknowledgement of the "author", the idea of a closed, finished, published work was also established. The author's copyright could only be attributed to a work with those characteristics. Are we going back to the medieval text instability? Cerquiglini, in his challenging work "*Eloge de la variante*", discusses the effects brought about by the modern publishing of Medieval texts, specially regarding word segmentation, punctuation, and the search for ONE original, of which the rest would only be copies with different levels of fidelity or fakeness. The essential thing in medieval texts would be variation, precisely because of the lack of the idea of an author.[4]

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We are in a field where things are first said in English, and are then translated, with good luck, or none at all, into other languages. There is no good equivalent between the English "literacy" and the Spanish "alfabetización". "Literacy" is more apt to describe the learning of social practices related to the production, use and circulation of written texts, while the Spanish "alfabetización" leads more directly to the learning of the alphabet as such.

However, words name what the users, always changing, make with them. An Internet search will rapidly inform us that the term "literacy" often appears associated with expressions related to the ITC:

Information literacy   Computer literacy
Digital literacy   Media literacy
Web literacy

(Fairly interchangeable terms, even though some differentiation systematizations have been tried, which are not yet being used).

But we also find:

Scientific literacy   Technology literacy
Environmental literacy Cultural literacy
Health literacy
Visual literacy (as the capacity of "reading body and gesture language")

We go further away from the written texts in expressions such as:

Economic literacy   Financial literacy
Baseball literacy

For example, the expression "baseball literacy" does not refer to someone who reads a lot about baseball, but to someone having a certain degree of proficiency in the practical skills related to that sport.

What meanings are we trying to convey when, from English, we speak about "computer, digital, or multi-media literacy"? In the library field[5] there is less difficulty to use these expressions, because it is assumed that they are related to information search, and the methods of searching for information have drastically changed. Information is no longer looked for in the books indexes, in encyclopedias or dictionaries and, less still, in card indexes which have been or are being destroyed. Information is searched for in digital databases, and we have to learn to use "keywords" and elemental logical operators in order to guide the search. In the library field, it is a matter for debate to define which are the skills required for a computer search, but it is much simpler than when we apparently want to talk "about the same issue" in the educational field.

In education, it is not only a matter of searching for information, but also of doing something with it, transforming information into knowledge. In principle, a librarian is not concerned with what the user will do with the information obtained. He doesn't even care if the information the user got, and which seems to satisfy him, is the one really required for the problem he is trying to solve.

For the educator, instead, the information search process is but a stage between two crucial moments: making a question that will result in the search, and end up by building a new knowledge (new at least from the learner's point of view)[6].

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In the education context, what can we understand by "computer, digital, or multimedia literacy"?

We know that, at basic education level, there is difficulties, opposition, in any case little use, including in the most advanced countries. On February 1983 in France, the Ministry of Education was concerned because only 20% of the teachers used multimedia tools in class.[7] In 2001, Larry Cuban published a book in Harvard University Press, which right away became a text for debate. The book is called "Oversold, underused", and its subtitle is "Reforming schools through technology 1980-2000". The author's thesis is that in USA computers do not have a significant role in the teaching practices of teachers

The detailed information we are starting to have about developed countries, contrasts with the huge propaganda by international agencies on the immediate educational benefits that could result from using new technologies, and the equally huge investments made by their respective governments. (All ministers of Education in Latin America agree: Internet in all schools is a priority. These ministers declare equipment purchase goals on solemn occasions such as, for example, at the beginning of the school year)[8].

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Maybe it would be useful to look into the relation between technological innovations and school, as an institution, in order to better place the debate on the effect of ITC on basic education.

School has its own technologies, inherited by tradition, which it maintains as if they were patriotic symbols: the blackboard, where chalk is used to write on. It also carefully maintains the school notebook technology, heir to the small individual slates.

School adopted (together with changes to its organization method), technologies foreign to it: the metal quill, successfully replacing the bird quill, which has to be sharpened constantly. I suspect that the pen's success, which drastically reduced the age to write in ink, was related to its similarity to the previous instrument. For some reason both are known as "quill", though the second one no longer

even resembles a bird's feather. The inkwell remained. The gesture of going with the quill to the page with extreme care so as to avoid a blot that would spoil everything, was still there. The change was, actually, the proscription of a weapon within the school: the instrument called penknife. And on prohibiting weapons within school, there is full agreement in advance.

But that same institution reacted negatively to the appearance of the following technological advance: the ball-point pen, a writing instrument that carried the ink within itself, which prevented the risky gesture of going from the inkwell to the paper, which, actually, made the whole on desks for inkwells redundant, and which, to boot, replaced the sharp tip of the metal quill (usual aggression instrument) for a rounded tip. To all these advantages, the school institution reacted with a categorical NO, and for reasons which today sound as ridiculous: the new instrument (the ball-point pen) would "ruin" the students' handwriting. Of course, by then we were in the transition between calligraphy as a school objective, and the legible italicized handwriting that finally prevailed.

School often wages battles lost beforehand, but they face them in order to maintain "their own technologies", and this has to be taken into account. They also fought against pocket calculators, and for the same reason: they would "ruin" the students' calculation skills. Sadly, and to their regret, they had to accept it. And they learnt to used them cleverly when it discovered that calculation mechanics could be delegated to that instrument, but that the student was always in charge of the intelligent approximate calculation, as he was the only one capable of assessing if the result was possible or absurd, through an error in pressing the keys. The reintroduction of estimated calculation as an intelligent activity, and the delegation of exact calculation as a mechanical activity, is still today characteristic of good schools in many places of the world, and in no way a distinctive sign of the adoption of a new technology on the school's part.

Another one of the writing technologies I have mentioned – the so called "typing machines" (mechanical or electrical) – were never accepted by school as an institution. Surveys among Latin American teachers have always resulted in the same answer: "they are too noisy", reason enough to keep them away from schools. Actually, typing machines entered school bureaucracy, but not classrooms. There were even no "typing machine workshops", such as now we have "computer workshops", which implies separate rooms, away from the sacred enclosure of the classroom.

Although typing machines were undoubtedly very powerful writing tools, they were kept away from the teaching field (even though they were used in school bureaucracy), for many reasons which I suspect are linked to the following: first, a very evident rupture from the previous writing methods (two hands writing instead of one); second, as I already said, the association of this writing method to a specific technical skill (the secretaries' learning in typewriting schools, or public scribes' assisting users in predetermined places). The increasing need to fill forms in typewriting was not reason enough for the school to tackle this technology, which was never allowed to actually enter the elemental or basic teaching field, in spite of its countless advantages.

Let us refer now to a more recent technology: TV. This technology was subject to strong discussion both for and against it. Some praised its educational advantages (and, in fact, there have been, and still are, many educational programs for distant areas supported by TV, for youths and adults, not for kids). Others, reacting against commercial TV invasion of the family space, claimed for a specific "literacy", aimed at a "critical reading" of TV messages. The debate stopped at facts: educational TV has its own space in programs for distant and rural areas, specially for youths or adults, and some schools have a TV set, associated to a VCR. That is to say, direct TV broadcasts are seldom used, for they disrupt the tight school schedule. The school library extended its contents then to a collection of videotapes, to support the teaching of specific issues: foreign languages, or contact with distant geographical places or any type of animal species (e.g., *National Geographic* series). Libraries – it's fair enough to stress this – had no problem in receiving these TV tapes collections, even thought they had to organize special areas for watching and listening to these tapes, without disturbing book readers.

In brief, the relationship between the development of socially used technologies, and the school as an institution, is a very complex issue. In general, technologies related to the act of writing had an impact (not always positive, as in the case of the ball-point pen and the typing machine). But school is highly conservative, reticent about incorporating new technologies that imply a drastic change from prior practices. PC technologies and Internet give access to an uncertain and out of control space: screen and keyboard can be used to see, read, write, listen, play … Too many simultaneous changes for an institution as conservative as school.

I mentioned before that "of all the professions involved with the production, circulation, cataloguing and distribution of written messages, probably the library community is the one which has better reacted to technological changes." This can be said of big libraries, but is it by any chance true about small libraries and school libraries? How is the library system at its primary level doing, where the use is less sophisticated, but more promising in terms of future?

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The situation is highly conflicting because, as I have mentioned, there are huge social expectations about education being the key to solve all sorts of things which, obviously, no educational system by itself can solve, as long as social inequalities exist, while poverty in the wrongly called "developing south" increases, while unemployment or underemployment is one of the most realistic expectations in spite of any collection of diplomas, while the list of the chosen by Forbes informs us that only one family (or one person) has an income higher than the GDP of several of the small countries in the planet, while international experts live to issue reports and "domestic evaluations" which will have little or no impact on the phenomena they deal with: poverty reduction, education quality, equity, transparency, efficiency and effectiveness of educational systems.

Poor countries, the "badly developed ones", tied to the reproduction mechanisms of foreign debt, go on indebting themselves to "give a computer to every school", without the least proper educational debate about what that implies. It is not the same to "give desks and toilet bowls to every school", than to give a computer to every school. Computers need permanent technical support; they require continuous software updating, they require a telephone line or wiring that will guarantee the Internet connection. To give a computer to every school without thinking of the essential infrastructure is to put something useless which will become obsolete a few months after being installed.

(Recycling every 3 years, also, will contribute to the self-reproducing indebting, because there is no extensive or intensive debate about the "free software" advantages).

Oddly enough, we don't hear as often or as strongly a similar demand regarding school, community or municipal libraries. "Internet in all libraries", starting by the school ones, would be a very reasonable demand …

There are few teachers ready to allow books (in plural, i.e., a classroom library) enter the classroom; less still are the teachers who will allow a computer in the classroom (distracting element, such as books). It is already a cliché to say that the teacher feels left aside by an attractive technology that generates – we already know – playful attitudes, and not necessarily learning attitudes. On the contrary, librarians don't feel that conflict: the computer is an instrument to request and search for information, which replaces card files. Less occupied space, and more functions. Ideal for a librarian.

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It is fashionable now to build "scenarios". Let us see, then, several short-term "possible scenarios".

Scenario 1 (thought by Microsoft) – All kids will attend school with their notebook (many of them donated by the Bill Gates Foundation). They will load all the bibliography of every subject in their notebooks, thus putting an end to the hideous photocopies, a technology which ruined the taste for

books, which gave all pages the same physical aspect, and which fragmented texts, long before Internet did. Also, it attempted against the authors' identity, who disappeared in the photocopies of photocopies circulating in badly developed countries. Teachers will be tutors, advisors, consultants … They will do plenty of things, except give lessons. The true "teachers" will be absent or, to put it more accurately, virtually present. The librarian will probably have a virtual presence too, as well as all or some of the course or program mates. And, as we already know, chat serves all purposes, including starting love relationships, not less successful than those started with actual presence and contact. The "face to face" and "body to body" situations, that have played a very important role in educational contacts of the past, tend to disappear. Thus we shall also avoid the potentially dangerous body contacts among members of the educational community. The only classroom learning courses will be introductory leveling courses, to ensure all students have similar computer knowledge. (Though it would be reasonable to expect that kindergarten and the first school years will be classroom learning courses, at least until it is discovered how to teach to read and write without the presence of a human being …)

Scenario 2 (conservative) – Some kids will have their ITC spaces away from school. School will take for granted that "out-of-school" knowledge (as it assumes all students know how to handle a TV set, record a program, etc.). After all, school never explicitly taught how to use a cell phone, and any kid has learnt it at school or with his friends. Neither did it teach how to use a TV remote control. At most, school just says, "Today at 6 pm watch a program on channel 11, on polar bears; tomorrow we shall comment about it in class." School does not teach "the language of images". Likewise, it can ask students to search for information on a given subject on the Internet, recommending a couple of sites, and implicitly assuming that the rapidly spreading of this technology exempts him from teaching a purely technological know-how. Digital gap? Thank you very much. School did not create it; it is just one more of the many social evils affecting its own performance, but it's not within its capacity to modify these social problems. How can we expect that the majority of teachers, badly paid and worse trained, teach to surf the over 50 million websites identified in April 2004? Librarians would just give access to information sites previously identified, with general satisfaction from teachers, families … and even users not very skilled in computers. Internet access will be through written lists, or lists circulating from person to person. In the same way a film or show is promoted.

Scenario 3 (dangerously idealistic) – The ITC are such a huge revolution, that they radically change the reading and writing processes and, specially, mark the disappearance of "alphabetical linearity". Knowledge will no longer be transmitted through written language, but through complex relationships between images (preferably moving ones), graphs, information capsules (in audio or in writing). The most important thing is to learn to interpret messages conveyed through all these media at once, but also to produce messages using state of the art technology. School takes as its fundamental goal this new "digital multimedia literacy", and relegates traditional teaching contents to the background, since the speed of changes in knowledge to be incorporated "for life" makes any schedule rapidly obsolete. Also, fastness in changes in technologies themselves requires devoting considerable time to the permanent recycling of the users themselves (including experts). Teachers will be replaced by computer technicians, with updated data on communication since, as some of their promoters say, "multimedia literacy (…) teaches to read and write with text, sound and images, in non linear interactive documents." [9] Something similar can be applied, in this scenario, to librarians, more concerned with computer knowledge than with the knowledge that can be accessed by means of computers.

When we read the "Information Literacy Standards"[10] which are being promoted in USA – from Pre-K to Grade 12 – it is evident that they are not thinking about schools such as the ones in Latin America, where students attend classes only 4 hours a day: all the school time would be devoted to learning those communication techniques, with no time available for the curricula (and assuming there were only 20 students per class, instead of the 30 or 40 there are today; assuming there were many machines available, free access to Internet, technical support, machines and programs update, and all the rest).

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This scenario 3 often comes together with a progressive and well-thought discourse; sometimes, simply with the implacable futurism of visionaries. But whatever the kind of discourse, the truth is that it matches well the ideology the "society of knowledge", promoted by the World Bank and associated agencies. And here we must stop to think a little.

New economics are described as *knowledge economics*. In fact, James Wolfensohn, president of the World Bank (WB), proposed back in 1996 (and repeated it in 1999), that the WB be redefined as Knowledge Bank. The expression *knowledge management* regularly appears in recent documents by that agency and others, such as OCDE. What "knowledge" are they referring to? To a practical, immediately applicable, rapidly becoming obsolete (they are convinced that this knowledge will have an average 3 year life cycle), merchandise like any other, with a market value. Of course, everybody says knowledge should not be mistaken for information but, in their discourse, all terms get mixed up and, oddly enough, *learning* is sometimes totally dissociated from *knowledge*.

Institutions traditionally associated with *knowledge* (i.e., universities), are left aside, unless they adjust to this model, which of course is happening in many places. In principle, this new knowledge will be available in other places, and already is in the computer highways.

Where shall we get the knowledge required for this new economic dynamics? The key expression is *learning communities*. This expression is extremely ambiguous and, maybe, deliberately ambiguous. A learning community can have local existence (a company, a family, a rural community, whatever), or can have virtual existence (groups connected by Internet). Also, a school could be described as a learning community. But school ceases to be the learning place par excellence, and that is what matters.

Let us not fool ourselves: it is not scientific knowledge, the one which aims at intelligibility, which creates comprehensive systems (which we call *theories*), which demands demonstrations, contrast and discussion, which gives proof of the validity of its statements and constantly asks questions according to "intelligibility gaps". That knowledge is not included in this new knowledge. We are not discussing whether scientific knowledge is supplementary, opposite, or whatever, with regard to other knowledge (popular knowledge, technological knowledge, etc.). The serious thing here is word monopoly. New economists have taken the word *knowledge* as theirs. This knowledge is conceived as encapsulated and liable to be so; disposable, liable to become obsolete. Therefore, learning to throw away information is, to some ideologists, as important as learning to "load information"; human individuals are not fitted with a "delete" key, and so they talk about the need for training in *forgetting abilities*.

As we live in a market economy, speed counts and has its price. As a World Bank top manager said, "Traditional education is a *just in case* education; we need to replace it with a *just on time* education"[11]. (Here we can adequately appreciate the impact the valuing of speed and immediate applicability have on the dominant discourse). In another context, a high Microsoft executive, when praising the e-book and announcing in passing the death of writing on paper, uttered these key words, which have a high ideological content: "There no longer is any distinction between rich and poor, grown ups and children. The only distinction is between fast and slow".[12]

In this discussion, there is a great absentee: the notion itself of learning that is being used. What is the maximum speed at which learning can occur? What can be learnt through the screens? Learning is a process, and a process that takes its time. It is probable that the traditional age to start any kind of learning should be revised. But most surely, there is learning that demands "face to face and body to body", as well as there is fundamental learning that requires effective contact with the objects. Both Psychology and Psycho-pedagogy have a big task ahead in the near future: to discover which are the learnings that CANNOT be carried out by means of a screen.

ITC have appeared surrounded by an ideology prone discourse, of which we shall have to strip them in order to value them for themselves.

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The digital gap does exist indeed. But it is not the only existing gap. It is outrageous that there are more Internet connections in Manhattan than in the whole of Africa, but not more outrageous than other inequalities which we have lived with since decades ago. Particularly, the digital gap overlaps with the literacy gap we already knew, that eternal debt that has been hanging over us for long. We are in the decade of literacy according to UNESCO, whose current General Director has had the peculiar idea of appointing Mrs. Bush as "special ambassador" of said decade, no doubt to celebrate the re-entrance of USA to UNESCO, after about 20 years of absence.

But at the famous 1990 meeting at Jomtien, Thailand, when the World Bank signed with UNESCO the declaration of absolute priority to basic education, the goals for the last ten years of the 20th century had already been set: education for all and, of course, literacy for all.

And long before, in 1979, the ministers of education and those in charge of economic planning of Latin America and the Caribbean, were summoned by UNESCO itself to Mexico city, where they committed themselves to achieve, before the year 2000, school for all children, a general basic education of eight to ten years, and the elimination of illiteracy. It was the beginning of what was known as the Major Project of Education in Latin America and the Caribbean. Of course, similar meetings were held in other regions.

And thus we go, from declaration to declaration, from celebration to celebration, while strong sums of money are used for "external" assessments and certifications, which guarantee the homogenization of politics, much more than the renowned "transparency".

Thus we go from a previous unfulfilled commitment to the next one, without acknowledging the history of our own failures, while Europe and the North of the American continent are being invaded by undesired immigrants, while the AIDS and new "preventive wars" orphans claim for justice, wide-eyed, while the number grows of those surviving (and living badly) with less than a daily dollar, while the increase in wealth concentration among a few families and among a few companies is so outrageous as the number of kids being born with a life expectation of under five years.[13]

How can we bring literacy into this unequal world? What are we talking about? Is digital literacy the answer?

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As a researcher, I have been struggling for the past 25 years to extend the concept of "literacy", with an approach that is at once evolutionary, social and historical. I can say and maintain, with empirical evidence, that to introduce literacy is not to go across the "code barrier". It is not, **first**, because no serious linguistic analysis leads to the conclusion that writings historically developed are codes (in the sense that some artificial language are indeed, such as the Morse code or the binary code). **Second**, because what's essential in the literacy process, is a conceptual re-conversion: language, learnt as a communication instrument, should become an object independent from the elocution act, an object about which we can think, which can be analyzed. **Third**, because historically, writing is not a reflection of spoken communication, but a representation system at various levels, which leaves aside – i.e., does not represent – fundamental distinctions of oral communication (emphasis, intonation, repetitions, intentional pauses, rectifications), and introduces characteristics foreign to spoken communication (e.g., words that "sound" the same are written differently if there is a change of reference or syntactic significance). **Fourth**, because between "the language that is written" and spoken communication there are evident differences at every level (pragmatic, lexical, syntactic and phonological). And I stop here, because I could go on with the list.[14]

The difficulties in shifting from spoken to written communication are still there, with or without ITCs. What the ITCs help do, unaware, is:

To render obsolete the idea of bringing literacy with only one text. (But for decades, there are many of us who insist on the advantage of a diversity of texts from the beginning and, in that sense, libraries and librarians are an essential aid).

To render obsolete the pedagogical obsession with spelling (we must learn to use spell correctors with intelligence, the same as pocket calculators).

To render obsolete the idea of a unique source of information: the teacher or the textbook. (But for decades, good libraries and good librarians have been working towards this goal).

In brief, there are multiple convergence points between what is claimed as "novelties introduced by ITCs" (in educational terms), and what progressive tendencies in literacy (to give them a name) have been demanding for decades. In this sense, welcome the ITCs!

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To make my position clear, let me summarize it as follows:

I cannot speak about literacy in the void, but within a specific space-time. When computers were but just appearing, and being sure of the power of the keyboard in developing technologies, I started a campaign for the recovery of old mechanical typing machines in order to give them to rural schools in Mexico. Now I am struggling for access to books and ITCs in all those schools and in every school.[15]

I have promoted the creation of a website for all Spanish speaking children[16], and I have produced – with a team of young technicians – a multimedia CD in order to better make my own scientific production known.[17]

But I don't speak about digital education or digital literacy, because I think it isn't proper to speak of them. I speak about literacy by itself. The one corresponding to our space and time.

We need critical readers, who doubt about the truth of what they see in print on paper, or displayed on screen, text or image; readers who seek to understand other languages (how much easier it is now with the Internet!), without underestimating or magnifying the hegemonic English language.

Readers who will have a global vision of social and political problems (how much easier it is now with the Internet!), without sticking to narrow localisms.

Intelligent, alert, critical readers and producers of written language. What we have always searched for. Difficult task, and now, Internet helps, no doubt. Books and libraries too.

As opposed to the conservative school institution, libraries and librarians can play an avant-garde role, quite different from the supplementing role some attribute to them. Librarians must have a major space within the planning and execution of school tasks. It is not just a matter of encouraging kids to go to the library. It is about including library research as an integral part of educational projects, where the person responsible for the library has his/her own voice: informing the teachers about the resources available, about the intelligent use of new technologies, helping – having a "quieter" relationship with them – incorporate a technique to help learning.

In view of the fears and uncertainties on the teachers' part, school library services have a top importance role to fulfill. They are not asking for "training courses", as teachers do as a "protective shield" against unavoidable changes. Librarians have been trained out of need, as any other profession.

Librarians have not stopped at the semantic root of the word defining them. It is clear that their original job is to catalogue and make books and printed documents available. But they have been able to add recorded and video-recorded documents without much "professional trauma". They have also been able to incorporate all sorts of digital sources of access to information. They have already done so, while basic education teachers are still afraid, precisely because they are being summoned to bring about the "digital literacy", without necessarily understanding what we are talking about – and for a good reason, because the discourse is extremely ambiguous –, while curricula changes are being imposed on them, in which they have had no participation.

We need children and youths who can express themselves in writing in a convincing manner (how much easier it is now with the Internet!), who not simply communicate because "one has to be in permanent communication", but because they have something to communicate; the content of the message should be at least as important as the format. We need particularly creative new generations. They will be in charge, no more, no less, of inventing a new world order, where life will be worth living. It is the teachers' duty, but also that of librarians and all professions involved in transmitting and spreading knowledge. Professions that believe that it still makes sense to transmit the knowledge collected by men in their life journey. Professions that believe in humanity as a pluralistic entity. Without and hegemonic dominance. Let us struggle for this to be so.

NOTES:

[1] Cerquiglini, B. (1989) *Éloge de la variante. Histoire critique de la Philologie* Paris : Éditions du Seuil. Chartier, R. (1992) *Libros, lecturas y lectores en la Edad Moderna* (Chap. 3: « ¿Qué es un autor ? »). Barcelona: Alianza Universidad. Chartier, R. (2000) *Entre poder y placer* (Chap. V: "La invención del autor") Madrid: Ediciones Cátedra.

[2] See Ferreiro, E. (2001) *Past and Present of the Verbs to Read and to Write* Buenos Aires and Mexico: Fondo de Cultura Económica.

[3] Cortes Castellanos, J. *El catecismo en pictogramas de Fray Pedro de Gante* Madrid: Fundación Universitaria Española, 1987.

[4] According to this vision, the seven conserved complete manuscripts of the *Chanson de Roland* are so many other versions or realizations of the epic poem. "It is difficult to accept the idea that there is more than one *Chanson de Roland*, all of them authentic," rightly says Cerquiglini. (*Eloge de la variante*, Paris: Ed. du Seuil, 1989, p.63).

[5] See website of the American Library Association and links.

[6] The building of knowledge is not limited to "making sense" of fragments of information. Trying to make sense of information is typical of human cognition. But, to put it in Piaget's theory terms, the pure assimilation without accommodation is not enough. This is evident in case History knowledge, where attempts to link disperse pieces of information vaguely related among them, result in the greatest absurdities.

[7] Dossier "L'édition scolaire numérique", supplement de *La lettre de l'éducation* N° 426, October 6 2003, Le Monde newspaper.

[8] At the beginning of the school year, September 2003, the Secretary of Education of Mexico announces the government plan to buy 815,000 computers. Also at the beginning of the school year, March 2004, the Minister of Education of Argentina announced a plan to purchase 50,000 computers in the next 3 years. The difference in figures is related to the size of the school population, not to their intentions. See both countries' websites.

[9] The quotation is from p. 65 of A.Gutierrez Martin's book, *Alfabetización digital* (Barcelona: Gedisa, 2003). Of course, there is an overabundance of texts devoted to this subject, and it is not my intention to make a critical bibliographical revision.

[10] http://cnets.iste.org/currstands/cstands-il.html

[11] Recorded by the author, participant in a Global Dialogue, jointly organized by UNESCO and the World Bank in Germany, 2000.

[12] Recorded by the author, participant in the Publishers' World Congress, Buenos Aires, 2000.

[13] UNICEF annual report, submitted in Berlin on May 7 2004: "Chronic extreme poverty kills a million and a half children before they reach 5 years of age, in the 10 most needy countries in the world". In Afghanistan, for example, 25% of kids do not reach 5 years of age.

[14] See Ferreiro, E. (Comp.) *Relaciones de (in)dependencia entre oralidad y escritura* Barcelona: Gedisa, 2002.

[15] To struggle for access to the ITCs also means to start the debate: how many computers in each school? In what type of webs? Fitted with what kind of software? And so on.

[16] www.chicosyescritores.org

[17] Ferreiro, E. "Los niños piensan sobre la escritura", CD-Multimedia, México: Siglo XXI Editores, 2003-