Informational Literacy

David Casacuberta
Universitat Autonoma de Barcelona, Spain

INTRODUCTION

Digital divide is a metaphorical division which separates those citizens who can use new technologies to their own benefit from those who cannot. Digital divide is one of the biggest dangers to consolidation of a harmonic development of the information society.

Historically, projects are mostly centered on helping people that, either for economical or geographical reasons, are not able to have a computer or do not have the possibility to connect that computer to the Internet. Without any doubt, part of the solution resides in creating new telecommunication structures, but that is not the whole solution. There is more in e-inclusion than giving away computers and putting out more fiberoptics. Digital divide is a multidimensional phenomenon which includes lots of different drawbacks. A great many of them are mental in essence, so they can be avoided through education.

The theoretical basis for this approach is to a great degree inspired by the work of the economist Amartya Sen. In Sen (2001) there is a distinction between functionings and capacities. Functionings are elements of technical knowledge towards making something specific, for example, the technical details of sending an e-mail. On the other side, capacities are those pieces of knowledge which include action and social recognition, for example, to arrange a political demonstration using e-mail facilities.

The approach against digital divide which does not stop in the infrastructure, does not go any further than the functionings. That is, learning projects which teach the "four pillars" of computer use: Web browser, e-mail client, word processor, and digital spreadsheet. This is by no means wrong, but it is clearly not enough. Any approach towards diminishing the digital divide must take the theoretical approach described by Sen and work toward capacities, not just functionings.

Digital literacy should not only be about functionings, but about capacities. The final aim of a literacy and ICT campaign should be to give empowerment to the users, not only the technical knowledge of how to send e-mail to buy tickets through a Web site.

By the time this article was written (2005) there were no clear politics going beyond the functioning issues. There are good policies in the US and the EU about "critical thinking", for example, but almost no policies when the application of such curricula is to be used. National politics, in different European countries as well as in the U.S., is mostly centered in teaching the so-called "four pillars": basic communication and ofimatic issues. Most countries develop such courses with no further worries in segmenting the target, so everyone (the elderly, women, migrants, and young people) get the same basic courses with the same professors. An important exception are the pilot projects co-financed by the European Union from programs such as e-learning, Leonardo, or e-content, which do insist on the need of segmenting the targets and find novel ways to approach them. One example is using mobile phones instead of computers to reach teenagers better. Another interesting concept, which may seem to become a major trend in the EU in the following years, is the development of the e-porfolio: a way in which students collect all the relevant information and experience for work and are able to present it using this digital format.

Unfortunately, there are not clear policies yet, and the efforts towards informational literacy are in the hands of either individual researchers or social workers who want to go beyond those four pillars. For example, such a basic element as an informational literacy test has not even been implemented on either a national or European level. Some American universities have created a quite complete one, but it is neither standardized nor nationally distributed. The same can be told about e-portfolios today. Different universities in the EU and the U.S. have their own system and there is not such a thing as a common framework on e-portfolios which everyone can use.

BACKGROUND

As stated in the introduction, most pedagogical efforts have been directed towards the teaching of functionings. This is the necessary part we need as background to move to a more informational and cognitive type of learning.

Before arranging the contents of the course, a general model specifying the relationships between students and professors is needed. Here we will follow the model developed by the Center for Technological Capacity of Extremadura (Spain) (Equipo Técnico Aupex, 2003), which

is a good example of an advanced digital literacy course based mostly on functionings:

1. **Personal Contact:** Specially directed to avoid the initial fear that the students may have towards ICT.
2. **Seduction:** To show ICT as something attractive in order to stimulate the desire to learn. The mere description of how important ICT is for finding a job and how difficult a world without ICT skills would be usually Is not enough. As a matter of fact, these explanations of ICT use may de-motivate.
3. To teach how to use the different tools, also trying to involve its use in other activities, not directly related to ICT, like making a fanzine.
4. **Compromise:** To turn the student into an active subject in the learning process. The key word here is "collaboration". Advanced courses for digital literacy are based on the paradigm of "collaborative learning" as described, for example, in Bruffee (1999).

This naturally leads to the division of any digital literacy course into three main phases:

1. **Motivation:** Trying to find common interests among students in order to arrange the contents of the course instead of teaching mere functioning without any references to specific tasks.
2. **Capacitation:** The phase when the instrumental knowledge is taught: how to use the hardware, the operating system, and its associated software.
3. **Organization:** To teach how to work in teams on a common project so students can learn from each other, and the learning is associated with the social and cultural reality to which students belong.

That said, there are some issues that should be covered before arranging the informational literacy course. We have to be sure that our students are confident in all of the following areas. As we said before, we are not assuming that functionings are not necessary. Before gaining more proactive abilities that lead to capacities, the following abilities should be taught first.

1. Knowledge of the hardware and the physical structure of networks. This includes, as well, the basic knowledge related to hardware:
   - To turn on and off a computer safely
   - How to properly use the mouse
   - Introducing and removing floppy-disks, CD-ROMs, and DVDs
   - Recognizing the main elements inside a computer, once opened
   - It also includes teaching the basic knowledge about connections: (a) ow to connect and disconnect several computer elements: screen, keyboard, mouse, and so on; (b) how to safely connect peripherals like printers, scanners, and modems; (c) how to connect and synchronize external devices to store information such as pen-drives, mobile phones, and PDAs, and so forth.
2. Knowledge of the logical structure of software. This includes:
   - Basic use of the operating system.
   - Creating folders, moving, copying, and erasing documents.
   - Installing and uninstalling software.
   - Using the Internet browser, understanding what a URL and a hyperlink are, downloading documents and programs, and a very basic introduction to HTML.
   - Concept and main uses of search engines.
   - Using e-mail, basic functions of the e-mail clients, and anti-spam filters.
   - Introduction to other ICT simple applications such as chat programs, P2P networks, online forums, simple tools to publish Web pages, and so on.
3. Familiarity with the ICT vocabulary.
4. Functionality of software.
5. Ergonomics and security.
6. Ethical and social implications of ICT

INFORMATIONAL LITERACY: THE MAIN STEPS

These are the main elements that have to be considered to arrange an informational literacy program, project, or course that has given capacities (empowerment) as its central aim.

Acknowledge the Need for Information

This first step implies creating attitudes. Following Bruce (1994), the first characteristic that defines an informationally savvy person is the ability to learn in an independent and autonomous way. Therefore, the first characteristic we need to teach is the right attitude; instead of depending on other people to search, download, and install programs, we need to motivate an autonomy approach instead.

Identifying the Proper Information Sources

Once the students know they need the information and develop a "I will find it myself" attitude, they need to know