DIGITAL LITERACY IN THE EUROPEAN UNION: 
A CONTRIBUTION TO THE STATE-OF-THE-ART

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Abstract

Digital Literacy is one of the skills needed to promote inclusion of people in the new social paradigm known as the Information Society. In the European case, inequalities in access to information are still noticeable and digital inclusion is still a subject of attention of the community policies authorities. In this communication we will start by examining the concept of literacy, and then we will discuss the concept of digital literacy which is not synonymous with technological equipping. It is much more than this, i.e., it’s about knowing to take advantage of the potential of information and communication technologies to form a responsible citizen in the twenty-first century, a citizen that is aware of the fact that digital inclusion is essential to promote the principles of lifelong learning in society.

Introduction

In the current Information society, the recurrent use of technology has grown so much that today it is virtually impossible to separate it from ordinary activities developed by large part of the population.

However, despite the fact that Internet is, “in principle, an horizontal channel of communication” [1], and that people, regardless of status or social class, can access any type of information, the truth is that often reality is very different for two main reasons: first, all those who cannot afford are left out (and there are many!); and second, access to information is not a guarantee of knowledge achievement, not even learning [2].

This is due to the fact that the large majority of these people did not achieve the essential skills needed to use ICT productively, both in their professional and social life, because they don’t have “the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers.” [3], or in other words, they have not developed a digital literacy.

In the European case, it is very similar. This is the reason behind the recurring concern of institutional agencies in providing its population the development of skills in digital literacy in order to, if not extinguish, at least minimize their deficit in this area, and so to be at the same level to develop a sustainable and competitive economy [4].

In this context arises the EU-Project SPReaD (Strategic Project Management Tool-Kit for Creating), an innovative project created in March 2007, whose basic assumption is to design, finance, implement, coordinate and evaluate initiatives with the purpose of ensuring to the population the necessary skills to make use of ICT in various contexts, especially in the educational context [5], because digital literacy is considered vital to securing Europe’s competitiveness and cultural identity [6].

Therefore, in this paper we will list, in a very synthetic way, some features of this project, directing more to the educational context, and highlighting some experiments successfully carried out by the project’s members, and finally, we will also discuss the importance of developing some types of digital literacies to be used not only in schools but in all social levels in order to prepare citizens to act in a responsible and committed way, in order to ensure the full exercise of citizenship.
Context

According to [5], more than half of Europe’s population uses the Internet regularly, but it is important to note that there is still a large enough number of people (approximately 40%) who are deprived of using these technologies. This scenario requires a policy that besides providing access to technologies, should also teach citizens to use it correctly and in a responsible way, with special emphasis on the educational context, considering that with the new informational paradigm, informal learning contexts, like social networks, have an added value on lifelong learning.

Thus, within the European context appears the project EU- Project SPReaD (Strategic Project Management Tool-Kit for Creating), which is a practical way that makes possible the development of digital literacies in Europe, and took as reference six successful projects developed in regions partnering with the SPReaD [5]. According to this experiment, we determined that in regions where the use of ICT and the development of literacy is not well developed yet, actions such as the gradual implementation of these themes in the curriculum as a way to familiarize students with these approaches, has been a successful strategy. However, in regions such as the Netherlands, which have developed skills in digital literacies, the inclusion of this strategy adds complexity to the process, as the case of mobile devices. This experience showed that the use of these tools, when properly used in the educational context, can improve the regular use of ICT. Another conclusion, however not new for us, is that young people have greater ability to learn and handle ICT than the older and most importantly, that its recurrent use in an educational context, encourages them to study and especially to be more creative and innovative in using digital tools [5].

Based on this principle, we believe that the development of a conceptual framework for literacy can provide digital literacy of students so that they can intervene in the world mediated by technology and be agents in the construction of their knowledge. For that we will try to conceptualize what literacy is, and then analyze the different types of literacy.

Digital Literacies

According to [7], literacy is the term traditionally used to generally define competencies and skills related to reading and writing in its various forms of representation. However, [8] and [7], [9] and [10] are emphatic in stating that facing the changes resulting from the current moment, in which Internet and technologies are present, a rethinking of the concept is required by the literature dealing with the subject, since it has assumed new meanings. This new vision has expanded its range because in the opinion of the authors it covers other forms of expression beyond writing.

In 1992, a group of leaders consisting of 25 representatives of the education movement, met at the Aspen Institute’s Wye Woods Campus, with the aim of reaching a consensus on the definition of literacy, which would have to be the result of the vision and joint efforts to develop the literacy average in the United States average. Thus, they came out with the following definition: “Media literacy – is the ability of a citizen to access, analyze, and produce information for specific outcomes” [8].

There is an underlying concept developed by Kress when he defines “literacy is the term to use when we make messages using letters as the means of recording that message” [9].

However, [11] emphasizes that given the ambiguity of the term digital literacy, many people may incur in possible misunderstandings about the skills underlying the concept. In the literature we find many points of view of the relationship between technology and new literacies. According to [12], there are several points of view assumed: a transformative point of view, in the sense that technology becomes itself literacy, and an intermediate position, because it follows the line of some theorists who believe that technology and literacy affect each other. “According to this view, technology transforms literacy but literacy also transforms technology as users envision new ways of using emergent technologies for literate acts” [12]

We agree with [12] that both points of view contribute to the understanding of digital literacies. But we believe the approach that best suits the present time is that of the relationship between technology and literacy, for the changes come not only from technology, but, on the contrary, are the result of an entire social, political and economical context that “screams out” for changes that address to a communication that knows no boundaries and goes beyond the linear and sequential way of conceiving knowledge. Based on this assumption, it’s possible to infer the colossal importance of reaching the redefinition of the concept of literacy more suitable to media environments as a way to include media and offer opportunities if not to everyone else, at least to the small minority who has access to these technologies [13].

On this basis, we believe that the development of a holistic conceptual framework for digital literacy is
extremely important from the point that covers most of the cognitive skills that people use in digital environments [14]. In addition, it could also improve their understanding and provide effective grants to teachers and also to developers of virtual environments, in order to assist in developing the student as well as in assessing the quality of their learning. For this, [11] proposes a conceptual framework that includes five types of literacy, namely:

1. Photo-Visual Literacy: The Art of Reading Visual Representations;
2. Reproduction Literacy: The Art of Creative Recycling of Existing Materials;
3. Branching Literacy: Hypermedia And Non-Linear Thinking;
4. Information Literacy: The Art of Scepticism, and

This classification was the result of an extensive literature review, and as well as the result of the observation of sixty users [11] in service and mainly the result of the experience that the author has in the planning of digital environments for a diverse audience (children, youngsters, adults), both in industry and academia.

**Photo-Visual Literacy: The Art of Reading Visual Representations**

The evolution of environments that before were only text-based, and which can now also be represented by semantic graphics, raises cognitive skills like “using vision to think” [14]. This ability helps users in a clear and voluntarily way to absorb the messages that are displayed by pictures, symbols, icons, among others.

The development of this type of literacy offers important grants for people to read the world, where digital technologies have brought about the emergence of a hypertext language, made up not only by text but by the superposition of many images, a fact that drives us to interact and learn in different contexts, which require a faster processing that, according to [15], resembles a dynamic reading.

**Reproduction Literacy: The Art of Creative Recycling of Existing Materials**

According to [14], “digital reproduction literacy is defined as the ability to create new meanings or new interpretations by combining pre-existing, independent shreds of information in any form of media (text, graphic, or sound)”. This means that people who have developed this competency are able to present a synthetic thinking but with multiple dimensions, which means it will be easier to rearrange the information in new, creative and significant way.

Given the plethora of information that is in cyberspace, it is vitally important that users know how to select the most relevant information so that from there they can build new knowledge.

According to [16], that literacy is extremely important because it helps to understand the multiple factors that determine and influence the writing on the Internet, which includes in its domain forms of representation and meaning that go beyond forms of communication and beyond the written representation.

**Branching Literacy: Hypermedia and Non-Linear Thinking**

This literacy can help people deal with non-linear information, i.e., devoid of a logical sequence. However, we believe that for its complete development, many pre-requisites are required, among which we must highlight the well-developed spatial intelligence to not get lost in a world of immense information complexity. People who have developed this kind of literacy present a multidimensional thinking because, in theory, they are able to stay oriented without losing themselves while browsing in the immense chaos of information of cyberspace [17], because

The modern hypermedia environment provides users with a high degree of freedom in navigating through different domains of knowledge, but also presents them with problems arising from the need to construct knowledge from large quantities of independent pieces of information, reached in a nonlinear, “unordered” manner [11].

According to some authors like [18], by developing this kind of literacy students are able to create more robust and consistent mental models; they do not easily lose themselves when browsing websites because they easily understand abstract representations, the characteristic of the network and, finally, they have a high degree of competence and ability to build new knowledge.

With this in mind, we believe that one of the essential prerequisites would be the development of spatial intelligence that can be described as the ability to understand the world in its visual and spatial
In the case of literacies, it would be the ability not only to handle the various links in the cyberspace, but also the ability to perceive it in its nuances both at the organizational level, similar to a puzzle, but also at its most important visual details.

**Information Literacy: The Art of Scepticism**

In the present day, in which the Internet and the Information and Communication Technologies are present in many different areas of knowledge, has been noticed profound changes regarding the way we research, select and process information, especially academic information. These changes require students to develop skills related to information literacy [19], in other words, they can be understood as proficiencies needed to deal with the overload of information as a result of the digital growth and that according to [20], has caused the “information fatigue syndrome” IFS. In addition, it is a skill that needs to be developed in students, whereas today the motto to be followed predicts lifelong learning [21].

The author emphasizes that to know how to find, question, evaluate and effectively use information is not a power inherent in digital media. It has always existed, but in the present context, this skill has received an added importance, given the growth of wider contexts (virtual environments) as well as the faster processing and updating of information. All this requires a more rigorous and critical analysis about the information available on the network, because not everything that is put on the Internet can be considered reliable, trustworthy and recognized by the academic community as valid knowledge. According [14], the cognitive ability acts as a filter because “it identifies false, irrelevant, or biased information, and avoids its penetration into the learner’s cognition” [14].

Several authors are concerned to define what digital literacy is, in fact. Enumerate them here would be an exhausting work. However, we will discuss here the ideas of [21], which emphasize in his study the fact that discussions generated around the idea of literacy can be summarized in three main concepts, namely:

1. The ICT concept: Information literacy refers to the competence to use ICT to retrieve and disseminate information;
2. The information (re)sources concept: information literacy refers to the competence to find and use information independently or with the aid of intermediaries;
3. The information process concept: information literacy refers to the process of recognizing information need, retrieving, evaluating, using and disseminating of information to acquire or extend knowledge. This concept includes both the ICT and the information (re)sources concept and persons are considered as information systems that retrieve, evaluate, process and disseminate information to make decisions to survive, for self-actualization and development.

In the light of the above analysis, we believe that the importance of literacy in making people able to deal with the treatment of information in various areas of learning, corroborates the ideas of authors such as [21], [22], among others, that its development should be an effort to follow the subject throughout life, which should be initiated in the early grades of school, constituting an essential part of the curriculum, passing through all stages of learning, paying particular attention to cognitive and educational aspects, which are essential elements in the construction of knowledge.

**Socio-emotional Literacy**

It is undeniable that with the Internet and digital technologies a range of options in virtual environments have been opened, where people can communicate, exchange experiences and share knowledge such as social networks, chat rooms, among others. That requires its users to develop emotional-affective skills in a virtual environment where probably there is no physical contact, and where harmony and respect should be major values.

According to [11], that literacy is considered the most complex among the others because it requires a much higher critical power from its user. In addition, it also requires a more mature profile of the individual so you can analyze the possible pitfalls that exist in cyberspace, as it is composed of human beings it’s not immune to their vulnerabilities [1]. So, to its complete development, information literacy must be combined with branching literacy.

Thus we understand that people who have developed this literacy are open to dialogue, share information and above all learn collaboratively.

**Lessons Learned**

Concept of literacy is controversial and raises questioning because it contains a multiplicity of meanings and is used in different contexts with different purposes.
In general we can say that the new literacies help us to reflect and recognize that digital technologies and the Internet have promoted changes in how we build knowledge and also in how we spread this knowledge, and whether we like it or not, we must admit that in the current world, whose technologies are already part of our lives, have altered the ways we communicate and interact, in the absence of geographical boundaries that limited communication with the global village. And that brings us to think and analyze new positions that we have about the production of meaning coming from this web of connections where most people connect to each other and share different knowledge. Such practices, by the importance they have on the construction of knowledge, should be provided in an educational context in a formal, non formal and informal way [9]; [10].

For that to really take place in practice, it’s of fundamental importance the implementation of public policies, as is the case of the EU-Project SPreaD, which aims to foster actions for the qualification of its population, by their inclusion in a world saturated with digital technologies. These technologies will not be the salvation for all problems, but they will be, for sure, a gateway to a world full of information. A world that needs people prepared so they can use that space wisely and most importantly, to know how to enjoy its benefits. And this is only possible with the acquiescence of digital skills that not only can help in this task, but can also promote digital and social inclusion.

References


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