Complementary Information Literacy Training Practices in University Teaching and Academic Libraries

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ABSTRACT

Students now have information processing behaviors characterized by rapid shifts in attention, less reflection and failure to deploy metacognitive processes, preferring activities that bring immediate rewards for their information needs, even if the quality of the information they obtain is low. Consequently, they run into significant difficulties in the selection and critical evaluation of the information they find during university learning activities. This article presents two information literacy training initiatives addressing these issues at the University of Padova (Italy): one in a course in educational technologies offered as part of a second-cycle degree program, and the other in two of the university library system’s training facilities. The training workshops sought to be complementary, covering both the search engine and the library OPAC approach to information seeking.

KEYWORD

Critical Thinking, Information Flow, Information Literacy, Internet Information Overload

ONLINE INFORMATION FLOWS: ACCESS AND EXCESSES

In a very few years, the amount of information available has risen sharply: it is estimated that the human-created information in the world now exceeds 300 exabytes (300 followed by 18 zeros), while only five years ago there were just 30 exabytes. Thus, 90% of the data on the Internet today has been created after 2016, and over 2.5 exabytes are created every day (IBM 2016). This increase, however, is not driven by webpages alone: text digitizing and indexing with projects such as Google Books have made millions of books available online, with interesting side-effects on the evolution of the concept of copyright (Castro & De Queiroz, 2013) as well as in facilitating intertextual processes: for a huge number of books, in fact, Google Books displays scans of the original pages so that passages of a text can be quoted without having to own a digital or paper copy (Parks 2014).

More than 3 million Google searches are conducted worldwide each minute of every day (Schultz, 2018): though the Internet has thus brought an enormous increase in our ability to access information, this has not been matched by a parallel increase in our ability to process and deal with it. Consequently, we suffer from a true information overload (Jones, Ravid, & Rafaeli 2004: Melinat, Kreuzkam, & Stamer 2014; Roetzel, 2018). To make matters worse, most information on the Web
is by nature unstructured and the methods used to find it cannot be considered equivalent to those typical of a structured source such as a database or library (Taylor & Dalal, 2014). Indeed, the usual interaction with a search engine takes place through a few keywords, without being limited to a specific domain of knowledge or supported by categorical selection.

COGNITIVE EFFECTS OF INTERNET INFORMATION OVERLOAD: MORE TIME OR MORE ATTENTION?

Again because of the rapid pace of technological progress, we have not been able to develop a set of codified and culturally embedded practices which can help us cope with information overload. From a cognitive viewpoint, there are objective limits on our mind’s information processing capacity (Eppler & Mengis, 2004), as the flow of information that each of us deals with must be selected, organized and assessed in order to be absorbed. But this entails a major cognitive effort that often causes significant adverse impacts (Misra and Stokols 2012). Young people who are digital natives, for example, have information processing behaviors characterized by rapid shifts in attention and less deliberation. They thus engage in multitasking behaviors that lead to increased distraction and poor self-control, preferring activities that bring immediate rewards for their information needs, even if the quality is low. Recent neuroimaging studies appear to confirm that these behaviors are associated with structural changes in the brain (Loh & Kanai, 2016). Interestingly, it seems that the multitasking required in video games can improve attention control performance by modifying frontal-parietal brain circuitry. This suggests that exposure to different forms of multitasking can have different effects on cognition (Bavelier et al., 2012).

An important distinction should be made concerning the flow of information: looking actively for information is one thing, while being subjected to it is another (Jackson & Farzaneh, 2012). This difference has been vividly expressed as “pulling” information or having information “pushed” to you. A radio or a television blaring somewhere in the surroundings, the advertising on webpages of social networks that has nothing to do with the content we are focusing on are all examples of pushed information that is difficult to avoid (Feng et al., 2015). The problem is aggravated by the fact that we can use the Web with mobile devices whose small screens pose obstacles to using interfaces that manage information efficiently (Walsh, 2012; Ghose, Goldfarb & Han, 2012). All of this is a powerful distraction, the background noise of our social life that in many cases can generate what has been termed an attention deficit trait (Hallowell, 2005), expressed in less ability to pay attention and an uncontrolled increase in the time spent looking for information.

In this situation, time is less important than “attention capacity” (Anderson & De Palma, 2012), which is one of the fundamental factors that influences whether we are able to select the information that is in fact necessary and relevant to us (Levitin, 2014). The European Commission (2014) has begun to address the problem, calling in its Onlife Manifesto for efforts to “protect attentional capabilities”, noting that they are a “finite, precious and rare asset” and that “the right to focus our own attention is a critical and necessary condition for autonomy, responsibility, reflexivity, plurality...” (Floridi, 2015, 12). Accordingly, learning to take effective measures that help us set attention thresholds is very important, and requires that a specific group of competences be acquired.

INFORMATION LITERACY AS A PILLAR OF DIGITAL COMPETENCE TRAINING: THE EUROPEAN DIGCOMP FRAMEWORK

Information Literacy can be defined as the set of technical and methodological competences that enable an individual to know where and how to search for information, filter it and, above all, evaluate it appropriately (Head & Eisenberg, 2010). All students should be trained in these competences, which will be useful to them during their education and in daily life in order to avoid forms of information overload at the cognitive level (Khalid, Saeed, & Syed, 2016) or of information anxiety at the
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