

## **Integrating Information Literacy in Algerian Higher Education Curriculum:**

### **A Compelling Academic Desideratum**

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#### **Abstract**

Although digital technology has revolutionized our ways of teaching and learning, particularly the Internet, the Algerian student exaggerratingly relies on it in his research, he seems to neglect – intentionally or unintentionally - an important factor that closely contributes to developing his information literacy (IL). The paper will confirm the prevalence of this phenomenon by exposing our student's general lack of IL skills and his disinterest in evaluating online information. In a more explicit way, this research is a reflection on the importance of teaching IL and credibility evaluation skills situated in the online information environment. The intended practice should forcibly encourage the Algerian student to be able to identify, locate, organize, analyze, interpret, and evaluate information from a variety of digital sources, and eventually inculcate him with how to be an autonomous, self-directed learner.

**Keywords:** digital sources, higher education, information literacy, online information, research

#### **ملخص:**

على الرغم من أن التكنولوجيا الرقمية أحدثت ثورة في طرقنا المتعلقة بالتدريس والتعلم خاصة الإنترنت التي يعتمد عليها الطالب الجزائري في بحثه بشكل مبالغ يبدو أنه أهمل - عن قصد أو عن غير قصد - أحد العوامل الهامة التي تساهم إلى حد بعيد في تطوير المعرفة المعلوماتية. وسيؤكد المقال انتشار هذه الظاهرة من خلال عرض النقص العام لطلابنا في مهارات المعرفة المعلوماتية وعدم الاهتمام بها في تقييم المعلومات على الإنترنت. بطريقة أوضح يعكس هذا البحث أهمية تدريس مهارات المعرفة المعلوماتية وتقييمها في محيط المعلومات عبر الإنترنت. يشجع التطبيق المقصود الطالب الجزائري حتما على تكوين قدراته في تحديد وتنظيم وتحليل وتفسير وتقييم المعلومات من مجموعة متنوعة من المصادر الرقمية، وأخيرا غرس كيفية الاستقلالية والتعلم الذاتي.

**كلمات البحث:** مصادر رقمية، التعليم العالي، المعرفة المعلوماتية، تقييم المعلومات على الإنترنت، بحث

## **Introduction**

Despite the increase in the average level of education, library use is on the decline, particularly among students because of “technologization” that “propelled information access and exchange into the era of cyberspace” (Kapitzeke, 2001 p. 451). The “digital native” or the “Google generation” is more inclined to access knowledge quickly, prefer the illustrated media and shared information of Wikipedia type. Although students acknowledge that libraries are relevant and reliable, they argue that they are too slow and impractical.

The major objective of this paper is to define the undergraduate students’ level of awareness of digital information sources, to measure their level of digital literacy and to determine the various search strategies they use. In other words, there is almost a common understanding that students who search information on the Internet have little ability to reflect on their research practice, including information regarding the criteria for assessing the relevance of information. The important challenge that students face in this century then is to keeping pace with technological expertise and knowledge for finding and evaluating information.

### **1. The difference between literacy and information literacy?**

If we are familiar with the term “literacy”, the majority of us are unable to precisely define “information literacy” or even know if they are information literate or not. This ignorance can be either intentional or unintentional.

#### **1.1. Defining literacy**

‘Literacy’ or ‘being literate’ is defined in a number of ways, and these definitions are continually evolving. The term ‘literacy’, for example, sometimes refers only to reading, sometimes to reading and writing and sometimes, more rarely, to reading, writing,

speaking, and listening. A literate person is able to communicate effectively with others and understand written information.’ (“What is literacy?”). According to the US Workforce Investment Act of 1981, literacy is “an individual’s ability to read, write, speak in English, compute, and solve problems at levels of proficiency necessary to function on the job, in the family of the individual, and in society” (qtd. in Mazur & Doran, 2010, p. 102).

### **1.2 What is information literacy?**

The term “information” originates from the Latin *informatio*, meaning concept or idea. The word “literate” comes from the Latin *litteratus*, meaning lettered or learned (Wright & Welsh, 2010). New definitions of information literacy are evolving. Today they include how to access information in digital formats and how to evaluate information and use it appropriately. Shapiro and Hughes (1996) regard information literacy:

*As new liberal art that extends from knowing how to use computers and access*

*information to critical reflection on the nature of information itself, its technical infrastructure and its social, cultural and philosophical context and impact – as essential to the mental framework of the educated information-age citizen as he trivium of basic liberal arts was to the educated person in medieval society. td. in Cochran-Smith, Feiman-Nemser, McIntyre, & Demers)*

Information literacy could be defined as a set of skills that help the researcher to identify the needed information, locate, evaluate and once found use it in a problem-solving approach that eventually leads to its communication. This set can also be presented as a series of skills that enable the individual to succeed educationally and why not professionally once he leaves the university.

Teaching information literacy involves the communication of its essence and scope and explains how it is organized and saved by a variety of sources and access tools, and how to evaluate, organize and apply it in a variety of situations. Eisenberg et al. (2004) share the same view: “Information literacy is a set of skills and knowledge that not only allows us to find, evaluate, and use the information we need, but perhaps more important, allows us to filter out information we don’t need. Information skills are the necessary tools that help us successfully navigate the present and future landscape of information”.

The development of critical understanding and active participation is the end-result of acquiring information competencies. According to Abid (2004) information literacy “enables people to interpret and make informed judgments as users of information sources; but it also enables them to become producers of information in their own right, and thereby to become more powerful participants in society.”

By underestimating the importance of scientific and academic documentary research skills, the student contributes directly to impeding their acquisition. It even raises the question of the meaning this student can give it. The student’s engagement in learning IL depends on perceptions and provisions with respect to taught knowledge.

## **2. Assessing the engagement of the digital information literate**

The absolute majority of students, specifically low-level undergraduate students are far from being familiar with the subject of databases. Too many students usually resort to the Internet, and too few use books as a reference material during the research process. It is equally important to mention that limited research on faculty-student interaction and involvement show that faculty does not model positive information-literate behavior (Neely, 2006, p. 46).

As part of today's youth, students are often called 'digital natives' or "Google generation" because of the seemingly effortless way they engage with everything that is digital (*Media Smarts*). If the university's possible mission is to teach students to think for themselves, the advent of the knowledgeable society has made of information literacy one of the essential ends of education. More than ever, a university graduate is expected to know how to search and find information, a fact that requires awareness and definition of information needs, methods and research strategies, selection, evaluation and analysis of resources, and synthesis and communication. Mastering this skill is an important guarantee of university successful learning.

Training in documentary methodology should enable the acquisition of new work methods for greater autonomy and better university affiliation. In addition, the information explosion is such that the student must acquire at an early stage how to adopt a critical thinking towards the available information. Practices are likely to evolve very quickly and when leaving the university, students are expected to continue to train because of their profession requirement or retraining. To know how to find, evaluate and acquire information represents a major asset for the professional integration. It is therefore fundamental to promote information literacy (IL) in the digital age.

### **3. Students' needs, knowledge and hindrances**

Whatever their level, students acknowledge that they permanently use the Web/Internet as part of their research work or assignment. For many, using the library is the last resort. They generally pretend they already know everything they want to know about how to find information: to sit in front of a computer, type a word in an information retrieval system (Internet, library catalog, encyclopedias on CD-ROM, etc.), and click to settle with what comes out. Often, it is also the opinion of their teachers.

However, the results of studies converge despite their experience in using the computer and the Web, students face serious difficulties in formalizing their need for information, targeting their research topic, formulating effective queries (particularly in the selection of keywords and concepts), identifying the best strategy for a given search and assessing the relevance and validity of the obtained resources.

Consistent management of all these different components of information retrieval is not easy. Students demonstrate, moreover, a blatant disregard for research tools, their differences and how they work. In particular, most of them think that what they find on the Web with the help of a search engine is forcibly reliable and blindly validated.

In the same vein, students have great difficulty in identifying relevant information for the following reasons: they use inappropriate concepts, deploy deficient research strategies, and are incapable of interpreting a citation. Their research is ineffective; they proceed mainly by trial and error, wasting their time, a time that could be advantageous for their reading and analyzing documents and eventually writing their paper. They have little notion of ethical documentary which can lead to plagiarism without knowing it. This is true for both conventional/classical information retrieval (library catalogs) and research on the Web.

#### **4. Research need and preparation: A crucial step ... too often overlooked**

The delimitation of need is perhaps one of the most difficult tasks to perform an information seeking. However, it conditions all the others. It is the only guarantee of speed and efficiency of the information search process. The need for information is a complex concept. Being aware of this need (and therefore being aware of a lack of knowledge) necessitates that we paradoxically have

knowledge. Students with very little knowledge on a given topic search less information than those who have from the start acquired that knowledge. The first category has, in fact, much more difficulty to be aware of their ignorance. The paradox that confronts students as information seekers is that they should ask questions about what they do not know.

### **5. Information literacy impact on the research process**

Information literacy is a means to express personal ideas, develop arguments, refute the opinions of others, learn new things, or simply identify the truth or factual evidence about a topic (Warlick, 2004). It is then evident that students who are not information literate are unable to make informed decisions and must rely on others rather than thinking for themselves. Those who are information literate can analyze and interpret information and this ability enables them to respond critically and creatively to problems.

Consequently, we can think of information literacy as contributing to personal empowerment and the students' freedom to learn ("Information literacy"). When they know how to find and apply information they can teach themselves what they need to learn and practically how to learn.

In order to prepare their research in the most appropriate way, it is essential for students to define the need for information, to understand the topic, to identify the key concepts, to specify the questions that will guide their research, to identify the right keywords that best match their search, to reject insignificant terms, and finally to define the purpose of their work. These various steps are difficult to implement without some expertise in information search and also in the subject the students intend to research. This knowledge is also necessary to recognize if information is reliable and relevant.

Therefore, students often are hesitant, confused, frustrated and anxious at the early stages of seeking information. As information seekers, students predominantly do not succeed to clearly narrow their topic. It is noticed that students generally start using a search tool (almost exclusively a search engine on the Web) with one or two, sometimes three keywords. This kind of research hardly leads to relevant documents and quickly turns to be a source of dissatisfaction and frustration. By contrast, students trained on concept mapping conduct faster, more efficient and thorough research than others (Gordon, 2000).

Understanding and defining the purpose of research, by identifying concepts and keywords is therefore a task of paramount importance for any information search activity. This step can be split into several successive operations:

**A)** Be aware of a need for information on a work to do.  
**B)** Define information needs: type of work required (research work, synthesis report, bibliography, etc.), special requirements (type and number of documents required, number of pages, etc.), deadline, etc....

**C)** First draw on the student's own knowledge: What does he know about the topic? What are the first words that come to his mind? What does he want to know about the topic? Who? What? When? Where? Why? How? Eventually set a concept map.

**D)** Then help oneself with reference books, encyclopedias, dictionaries (especially glossary and synonyms), online or not online thesaurus, to have a good overview of the topic and narrow the list of keywords, related concepts, synonyms or equivalent terms. Also, check terminological dictionaries and thesauri to obtain the standardized vocabulary (this step will greatly improve research tools such as library catalogs, databases of articles...).

- E) Establish the research purpose in one sentence (it can be useful to limit or expand it in relation to the original question). Also establish the tentative work plan.
- F) Then select the final list of the most relevant keywords (only nouns, names, acronyms), organize them in order of importance and in a logical way: those that fit the research area, those that specify the research.
- G) Define the search limits: language(s), date (s), period(s) and area (s), type(s) of paper that could answer the question (scientific/literature/language articles, magazine articles, newspapers, news, statistics, laws and regulations, etc.) format (text, audio, video, image)

#### **6. Digital tools manipulation to gain access to information: How to perform the task?**

Being skilful in the use of information means that the searcher is able to know when there is a need for information and that he is able to find, evaluate and exploit the adequate information. Yet, several conducted international studies including surveys reached the same conclusion that a considerable number of students seem to misunderstand or do not know the basic elements of the database research process when trying to locate and use information.

Analysis confirms also that students leaving secondary education know very little possibilities to combine the various elements of a search, do not yet know the effect of specialized databases and especially seem to have difficulties to evaluate information. These shortcomings have a negative impact on the student's work, including difficulty in locating relevant information because search strategies are deficient, predominant use of internet search engines at the expense of research tools to identify validated

sources with an appropriate level, and voluntarily or involuntarily fall in the trap of plagiarism – a serious ethical issue.

More often than not, documentary search training, when it exists, tends to develop only a set of skills of technical kind, if this technical training is important, it remains insufficient. Information literacy teaching cannot be limited to only training in documentary search; it must go beyond upstream and downstream.

Upstream, to be aware of one's need for information is one of the most important aspects of the access to information process. Involvement at this level is essential, but requires tight collaboration between experts in the field and teachers who submit issues to students.

Downstream, information literacy does not end when the document reference is obtained. It has to integrate the steps of understanding, criticism and evaluation of any information that is available to measure its relevance regarding the initial requirements of its use, management and operation. The ultimate aim of this process is to develop its own knowledge and reframe its original documentary need. Here again, collaboration between librarians and teachers is essential.

For this, training should involve other actors than the only documentation specialist (the librarian); there is a partnership to establish with teachers. The documentation specialist certainly provides a set of techniques, procedures and strategies that are specific to his profession and that are complementary to those brought by the teacher who is an expert in curricula content and disciplinary methods.

### **6.1. Selection of search tools: The visible Web vs. the invisible Web**

It is very important that students select the adequate research tool(s) among the tens if not the hundreds available on the Internet. The aim of the selection is to be provided with the most relevant

resources for the research (or part of the research) data. This step is the second great difficulty of finding information. There is indeed no magic formula.

The vast majority of students as Internet users most of the time content themselves with the same Web search engine, Google. However, if it is sometimes a good choice, it is far from being so in all circumstances. The choice of the Web as a source of documentation is not always the most appropriate, even if it is now possible to access via the Internet resources that were not so long ago an exclusive library domain including items like library catalogs, encyclopedias, specialized databases, bibliographic databases, patent databases, image databases...).

These sources are not free and are not necessarily accessible via a search engine. They are often part of what is called the “Invisible” or “Deep” Web. The students may believe it would be easier to just stick with what they can find with Google. Yet, it is always hard to find what the students are seeking with a search engine, particularly if they are searching for something complicated or not clearly defined. They have to think of the Web as a wide library.

They would not expect to just walk in the front door and instantly find the needed information on the history of paper clips ready to collect on the front desk. They should have to dig for it. This is where search engines with their visible webs and directories will unfortunately show no assistance, an area that forcibly belongs to invisible webs only (Boswell).

Considering the number of domains, the Visible (also known as Open or Surface) web contains a huge amount of material sources. But Are they reliable? Of course, they are not. Fortunately, there are search tools for finding the needed reliable documents that lie in the Invisible Web for which we have to be charged a fee in the form of subscription in order to get access to. It is not unusual to

begin a search for information by looking for specific tools that can meet the research aim.

The selection of a particular search tool depends on several factors; the type of sought documents is the most important: (scientific, literary, newspaper or popular articles, statistical or geophysical data, monographs, theses or dissertations, official publications, interviews, pictures and multimedia resources, software, expert advice, analysis, opinions, etc.). The limitations of the search, the news source, validity and reliability of the sought information, constraints of time and space to search are other factors that can influence the selection of a search tool. Tools that seem similar at first sight (e.g. two search engines) can provide very different advanced features. Finally, the expertise that we have on these tools clearly influences the students' choice.

## **6.2. So slow is the students' training to enhance their information literacy**

Methodological training is far from giving space to an important question on the ability of users to identify and evaluate information found at random in Internet searches. It is true that this is a relatively new issue, difficult to grasp, escaping the conventional rules of documentary world. In addition, this area is without a recognized holder: who should be assigned the task of teaching/training students and users in evaluating information, teachers, librarians or both? The question remains unanswered. In the educational field the burgeoning information literacy consists of a variety of themes more or less well defined.

When elaborating a research project, the concept of information literacy emerges out of the study in the form of the following categories: using information technology (IT), finding information, controlling information, building knowledge, using information in ethical ways, and presenting information (Mertes iii). Increasingly, the concept of training in information literacy is

considered crucially important for enabling Algerian students to face the challenge of good use of information technology and communication.

Indeed, the university has reached a conclusion that computers, the Internet and wireless handheld devices are now fundamentally changing the way information is created, transmitted, accessed and stored. But it has also realized that this advantage, if not well exploited, will turn into a disadvantage. To preserve it, students need to be taught the importance of information literacy.

In this context, information literacy has become a new paradigm in the field of information and communication. There is a common talk about information fluency or information competency. However, in this initial phase of IL development as a concept, how it is defined, understood and applied varies from one country, culture or language group to another. Information literacy can be defined as a means that allows the individual to seek, evaluate, use and create information effectively to achieve his personal, social, professional and educational objectives.

It is important to remember that today understanding digital technologies is not enough. As an inseparable part of academia, students are expected to learn how to effectively and efficiently use these incredibly diverse and powerful technologies to search, retrieve, organize, analyze, evaluate, and finally apply the extracted or obtained information concretely in order to make decisions and solve problems.

### **Recommendations**

Despite these challenges, the development of information literacy as such is rarely supported by our universities. Due to its absolute necessity, information literacy should be integrated in curricula and taught as a compulsory course to students of all levels and specifically to those students who are required to write their

Master's dissertation. Here libraries have a crucial role to play by organizing information sessions for students. The teacher's involvement is equally important because he can also address this issue in the context of its course. However, the course should not focus only on the technical aspects related to the handling and use of information tools.

In sum, our students should be inculcated methods and strategies. Information retrieval is a complex task that implements specific cognitive processes. It can be linked to learning as it concerns attitudes and basic skills, and must precede or at least accompany the entire teaching process.

To be digital information literate is certainly not "a piece of cake". We have to convince our students and ourselves as teachers to seriously and urgently think of elaborating and implementing a program through which future students will be engaged in learning how to become real "digital natives" who can adequately extract the needed information for their research tasks. Here are some recommendations:

- The creation of a national document training policy where both teachers and students are involved.
- Official incorporation of digital information literacy at all levels in the national curricula
- The commitment of national/university libraries in this action
- Serious and permanent involvement of concerned parts to identify the difficulties in implementing digital information literacy training.
- Publication of a guide for the development of digital information and documentation training program. The program should be practice-oriented, remain open, offering various options of choice that seem most satisfactory to its

users based on their context and preferences, and also provide a framework to allow evaluation of training.

It is not too late to start reflecting on how to teach the use and evaluation of digital information to our students by giving it a priority. As a practiced skill, information literacy is deemed necessary for successful studies at the university as it allows students to establish a learning plan and develop their capacity for autonomy in academic work and life.

### **Conclusion**

This paper through its content not only supports the necessity to teach information literacy to students with the commitment of libraries in this action, but also exposes in the relatively restrictive context the difficulties of its implementation because of our flagrant unconcern with this serious issue. In this case, is it not the time that the act of “walk the walk” transcends that of “talk the talk” to properly engage our students in learning how to become digital information literates and eventually make them more efficient and powerful researchers.

Information literacy learning increases the students’ ability to assimilate knowledge and develop his research skills. Its ultimate aim is to give them a more active position in their academic career and make them more autonomous in the field of research. The explosion of information and the new ways of disseminating it are now playing a major role in transmitting and updating and developing knowledge. Indeed, the essential purpose of digital information literacy is to provide training study tools that allow students to concretely experience heuristic approaches in a given subject area and critical investigation of found material sources and thereby be able to integrate documentary techniques.

These considerations are tentative, but they should be kept in mind to enforce the gradual practice of this teaching. In this perspective, the competency framework that is proposed in the following points, attempts to articulate all the training objectives and maintain consistency. The skills to access the command of information literacy are presented along the following lines:

- Learn to specify the needed information
- know where and how to find it
- know how to select pertinently documents that the student wants to keep
- Be able to identify sources
- Be able to read, understand and extract the adequate information
- know how to evaluate a document, put into perspective the proposed information and make a critical analysis of its contents
- Know how to manage and operate its documentation

IL orientation practically remains unrestrained, favors the suggestion of more various strategies from teachers to students based on their context and preferences, and supports options that lead to an adequate and convincing IL teaching and provide a framework to allow its teaching evaluation.

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Prof. TOULGUI Ladi is currently teaching as a senior lecturer in civilization in the Department of Letters and English Language – University of 8 May 1945/Guelma. He holds a Doctorate degree in American civilization. His major fields of interest: Multiculturalism, African American history, race and ethnicity, immigration studies, postcolonial studies, US/UK politics, listening and speaking skills, formation literacy, and research methodology.