CONSTRUCTING BRIDGES FOR ACADEMIC DISCOURSES
THE ROLE OF THE INFORMATION PROFESSIONAL IN THE NEW ACADEMIC LITERACY AGENDA FOR LATIN AMERICA

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Abstract

This paper reviews the characteristics of academic discourse and the necessary skills that the academic information user should develop to adequately make use of academic discourses, the new literacies and the role of information professionals to develop these literacies. This new role of the information professionals within the Latin American context, is targeted to identify and take advantage of the new literacies: visual literacy, data literacy, media literacy, statistical literacy and meta-literacy, to complement the efforts of traditional information and academic literacies and to address the importance of the information professional intervention for creating informational linkages between academic discourses and users.

Keywords: information, professional, university, higher education, libraries

1. Introduction

Academic discourse is rooted in the scientific and university environments and it is produced in the academic and scientific fields and includes both the works produced by academic processes for the dissemination of scientific knowledge [1]. The aim of academic discourse is the creation and dissemination of knowledge, to sustain its legitimacy and scientific significance within its own disciplinary community and should build textual argumentative structures [2].

Academic discourse occurs in the academic and scientific fields and includes both the works produced by university students as well as those texts in

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the academy for the dissemination of scientific knowledge [1]. Some authors refer to the academic discourse as the field of production and circulation of discourses that involves researchers, teachers and students and refers to the set of productions, either orally or in writing, made in context of teaching and learning [3, 4]. Comprehension skills are acquired academic discourse at different stages of academic training.

Academic discourses have their own guidelines for reading and presentation of research processes and the real matter is that requirements for understanding those discourses usually are implicit in the grasping of disciplinary knowledge across educational processes, addressing them without necessarily having formal training. This fact has caused the concern of Latin American specialists in education and information, generating efforts directed to promote informational and academic skills: Academic Literacy and Information Literacy (INFOLIT). Academic Literacy addresses a framework for the development of the necessary skills for understanding academic discourse, while Information Literacy deals with the organization and use of scientific information.

The process of appropriation of knowledge through academic discourse is complex and requires skills that must be applied correctly to achieve the ultimate goal of education. In this situation, what actions or strategies information professionals to assist and facilitate the process of acquisition and processing of information must be established? Who within the field of higher education is in position to promote and lead skill programmes and educational strategies to understand and make use of academic discourses?

2. Information Literacy and Academic Literacy - the case of Latin America

In one hand, Academic Literacy (AL), is approached from an educational point of view and focuses primarily on teachers and students, but actually goes beyond the simple ability to know how to deal with academic discourse [5]. On the other hand, Information Literacy perspectives try to develop in information users the skills to communicate correctly, to know how to express what is thought logically, and how to use the appropriate vocabulary in an academic context. It is essential for school, business and personal life that the student is able to identify which audience is targeted message; learn how orderly structure ideas; know how to formulate a document in different types, as they can be essays, reviews, abstracts, reports; determine the style most used in their area of expertise to draft and to quote; and finally how to apply appropriate technical information [6].

Information literacy aims to develop user skills for the proper handling of information, ranging from identification to the ethical use of information and assuming that the informational literate person possesses a wide view of the process of interaction with the academic information. Meanwhile academic literacy aims that university students develop skills in two areas: reading and writing. These two skills should be developed to allow the student to recognize

and in a much broader sense to interact with academic discourses. Clearly both literacy efforts, academic and informational, are intended to develop the necessary skills in the information user for the proper management of what can be defined as academic discourse.

The notion of academic literacy has its origins in American universities, which have developed strategies that allow students to pursue various programs to develop skills that will allow them to integrate the academic discourse properly into the educative process. For this approach, writing and thinking are intertwined and work involves re-writing what is already known [7]. In Latin America, specifically in Argentina there has been a growing concern for operating pedagogical perspectives for the effective assimilation of scientific knowledge by students who interact and understand the content of scientific texts. Carlino argues that in order to seize any content, students have to rebuild it again and again, where reading and writing become essential tools in this task of assimilation and transformation of knowledge [8].

For Carlino, AL comprises the acquisition of language skills and cognitive strategies that allow the interpretation and production of texts in the context of study. The concept of AL has been developing for some time and points the set of notions and strategies needed to participate in the discursive culture of disciplines as well as in the activities of production and text analysis required to learn in college stages [5]. Some researchers in the field have begun to mention that AL goes beyond the simple ability to read and write in the field of Science. AL involves a number of skills that allow the academic discourse user to add a critical view of what is read and written in academia. Carlino proposes a new definition, like teaching process that may (or may not) be implemented to improve access for students to the different cultures of the disciplines written [9].

In searching for a definition of AL one can see that there is an ambiguity in defining the term but most authors agree that the AL includes reading, writing and critical thinking skills that a student must have to carry out the tasks of higher education [9]. These skills in today's university context assume that the actors involved in teaching and learning processes have the necessary skills to understand and in turn produce academic texts in a timely manner. So, to be literate for academic work involves the development of linguistic competence order; however the current Latin American context suggests that this ability is scarce or non-existent among the majority of students. Scientific texts have characteristics that require different cognitive processes that are required to read literary texts of informational or cut and it is necessary that those involved recognize this need and beyond that to establish strategies to develop the skills necessary for interaction with academic discourse.

AL is aimed primarily at students and teachers of universities and researchers involved in the preparation and publication of academic discourse and information literacy is aimed at a wider audience, anyone individual who interacts with the information and do not necessarily in academia, but both are emerging to develop those skills needed to enable the information user a

mature, honest, critical and autonomous behaviour in the handling of information.

3. Fortunate coincidences

Along with AL, but coming from Information Sciences perspectives we have suggested Information Literacy with its own efforts to facilitate the information users to develop skills for the assimilation and appropriate interaction of academic discourse. These efforts are in fact, in close relation to pedagogical concerns and innovative perspectives on education and are in itself an educative research problem [10, 11].

INFOLIT has gained importance in recent years due to the need to develop skills to 'survive' the technological advances that are renewed every day and more varied. The INFOLIT says people must, whatever their activity, develop skills to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. Besides being able to influence the development of the environment in which they operate. Information literacy not only states that the user is consumer information thereof, but also a producer of it. So, the general 'bet' is that information user that is able to develop skills in the management of information technology becomes an agent of change that directly impacts the environment in which the user develops and the standard of living will be likely to be significantly improved in her benefit. Literacy involves a continuum of learning that empowers people to achieve their goals, develop their knowledge and potential and participate fully in the community and the wider society [12, 13].

So how can we define Information Literacy? This term was first used in 1974 by Paul Zurkowsky to define the skills that library staff should have to solve problems for users. Over time some definitions have appeared, as did the American Library Association Committee on Information Literacy (ALA), defining it as "the ability to understand and a set of skills that enable individuals to recognize when information is needed and have the ability to locate, evaluate and effectively use the required information" [14]. But over time it seems that this definition has been cut and other definitions have emerged as the British College of Library and Information Professionals (BCLIP) defines information literacy as knowing when and why a user needs information, where to find it and how to evaluate, use and communicate it in an ethical manner [15]. In this definition we can find a new element that was not mentioned in ALA's definition: the need to communicate academic information.

This enriched notion of Information Literacy influenced at the beginning of the 2000 decade, the Mexican perspective that information user must develop the skills to determine the nature of an information need; search and find information; retrieve information; evaluate information; assimilate and use information; present the results of the information gathered and respect for intellectual property and copyright [16].

From this point of view, Information Literacy aims to develop in the user the need for lifelong learning. Such changes require a level of maturity in the individual to interact with the diversity of information sources and treatment of information. At the same time, AL aims to point out the set of concepts and strategies needed to participate in the discursive culture of disciplines as well as in the activities for production of academic discourses and text analysis required to learn in college [5]. We argue that the objectives pursued both perspectives. AL and INFOLIT are fully compatible, since both suggest the need to develop skills that allow understanding and management of scientific information, but each with their respective peculiarities.

4. Developing intervention paths - a methodological approach

With the above argument stated, we can go deeper in the originating question about who can be able to lead efforts for the understating of academic discourses: we sustain that information professionals, at least in the Latin American context, have currently a unique opportunity to become essential agents in the process of acquisition and processing of academic discourse for any individual who needs it.

The changes brought by ICTs have diversified the range of options to access information, as well as the requirements to gain access and understanding academic discourses that can be used for individual and collective development. Consequently, information professionals could develop a range of skills and competencies to position themselves in a privileged place to effectively facilitate the acquisition of scientific knowledge.

The main argument for this intervention relies on the acquisition of scientific knowledge generates specific and always changing information needs, needs that should be satisfied in a trustworthy environment: in one hand, on reliable and valuable information services and advice; and on the other, on effective user literacy programmes. Until now, there is no other agent in academic life in terms of strategic location – the library services, and in terms of capabilities than information professionals, facilitating the acquisition in users for the autonomy in the process of producing and consuming academic discourses; while this maturity is achieved, we strongly suggest the information professional as the indicated for accompany individuals and companies in the quest of scientific information retrieving, understanding, and producing in academic life.

Now, the problem relies on developing a working perspective for making sense of the intervention of this agency: how are academic discourses related to information needs? How to effectively promote autonomy in the consumption and production of academic discourses? The working methodology for exploring this question required a literature review of the relationships between reading comprehension of academic discourse and skills that are necessary to facilitate its understanding; we have argued that these skills are known as AL. A deductive method allowed a first approach to the subject and subsequently

facilitated the identification of different literacies that are involved in the process of reading and writing academic discourses. The exploration of those literacies lead to a second step: the inductive method to analyse the role of different literacies involved in the management process of academic discourse, taking special interest in analysing the differences and similarities between them. Also, it allowed the construction of a framework for reviewing interesting particularities resulting from the union of different literacies.

5. Results

Assimilating information involves developing skills for critical reading of academic texts and these skills allow interaction with academic texts fluently and in a suitable way. Academic texts come in a wide range of formats, so reading academic discourse takes more than knowing how to read, it involves developing metacognitive skills that are involved in memory, attention, perception, necessary for the understanding of the information contained therein. So, reading academic discourses involves three basic elements: text, as discourse, which makes feasible an intentional meaning; (2) the authors, their purposes and intentions; (3) the reader or interpreter, who has to decrypt the content that the author gave the text, without renouncing him as an interpreter in the possibility of giving a meaning itself [17].

To read academic discourses is to establish communication with the author of the text. Reading is communicating, is to receive a message that is facilitated by the text involves the inference of ideas to give meaning to the message being received, this process is affected by different factors that also affect the reading process, such as the level academic preconceptions, socioeconomic status, etc. Isabel Sole defines the act of reading as a process of interaction between reader and text, the process by which the first attempts to satisfy (obtain information relevant to) the objectives to guide their reading. This claim has several implications, involves first the presence of an active reader that processes and examines the text. It also implies that there must always be an objective to guide reading [18]. The reader should extract the information contained in the academic text forming conscious ideas in the reader's mind, and as it was mentioned is not a simple process, scientific texts are difficult to understand if decoding capabilities are not present.

Reading is an act of transformation, is an act of assimilation of ideas that will later be used for decision-making. Individuals who have the right information can transform their environment, their social life. Then, as Cassany stated "reading is not an independent cognitive skills of people and contexts, but a tool to act in society, an instrument for improving the living conditions of the learner" [19]. People do not read or understand texts as neutral meanings, they read discourses of their environment and understand data that allow them to interact and change their lives. Reading an academic discourse is also reading the real world.

For understanding academic discourse, Montaño groups required competences into *semantic competences*: referring to the ability in recognizing and using the meanings and vocabulary; *language competences*: referring to the possibility of using phonetic, morphological, and syntactic rules; *textual competence*s: referring to the recognition of micro and macro formal structures to ensure coherence and cohesion; referred to the recognition of certain communicative intentions, identifying aspects of the context, relationships between the content and communicative intentions: pragmatic or cultural competence.

Then, understanding that academic discourse involves the application and use of various skills, we argue now that it is not possible to go into the management of scientific information with limited and isolated skills; a holistic combination of skills that prepare the user is needed to treat academic discourse. These skills are related to the literacies an individual possesses in order to understand and produce scientific information, extending this notion to the ability to use language, numbers, images and other media to understand and use the system of dominant symbols of a culture [12, p. 21; 13, p. 30].

Cassany in 2006 defined literacy as the practices of comprehension and production of written materials in a community, where it is not enough to read and produce information or knowledge, but also to learn to live collectively [19]. In this case, literacy are the skills that allow an individual to read, write, listen, see and communicate academic discourse appropriately using various formats. The competences that involve these cognitive skills are related to the ways the academic discourses presents itself: visually, textual, media related, and in numerical form, so attending to the notion of literacy, there can be found at least five different contemporary traditions dealing with the notion of literacy: *visual literacy; media literacy; data literacy, statistical literacy and meta-literacy*.

5.1. Visual literacy

The term 'visual literacy' is starting to become popular in educational research and practice. The Association of College & Research Libraries (ACRL) defines visual literacy as the ability to allow an individual to find, interpret, evaluate, use and create images and visual media effectively. The importance of visual literacy relies in helping users to read and write information in audio-visual formats. The human brain processes the images captured by sight, giving them a meaning depending on cultural factors that influence the process of subjectivity formation and individual interpretation of the world. This ability to read and understand images is not inherent to digital natives or to information professionals, thus the need for education in this matter is as necessary for users as for information professionals.

We live in a world that is full of images to the extent that the information user is the objective of messages from such a large number of images and with complex meanings, ranging from sell, educate, persuade, entertain and to

narrate events or stories. To effectively read images, which is giving meaning for understanding the message they carry, training is required. There are a range of images that can communicate information that is not as easy to decipher, and that's where a broader vision for effective reading of visual information is necessary. Reading images involves a mental effort and is not simple and automatic as any might think. This reading involves active participation of the viewer, as the images do not achieve the objective of communicating if the viewer does not have the necessary skills. The importance of visual literacy depends on this fact, because it is through the sense of sight that visual perception for individuals performs the exercise of reading images; this action allows it to build scientific knowledge and constitute academic discourses, where the user learn to discriminate and classify the elements that give meaning to information and therefore can make decisions critically.

5.2. Media literacy

Mass media is a typical manifestation of the twentieth century. Media literacy is a need that arises due to the proliferation of technology that allows the transferring of information using ICTs. The most widely accepted definition of Media Literacy was proposed by participants at the Aspen Media Literacy Leadership Institute in 1992, and is defined "as the ability to access, analyse, evaluate and create media in a variety forms". Media-Lit Kit defines it as the framework to access, analyse, evaluate and create messages in a variety of formats, from print to video or Internet, where the literacy goals are to help the user to develop the skills needed to be competent, critical and literate in their interaction with the media and to be autonomous in analysing the information it receives from them, in other words have autonomy review [20].

5.3. Data literacy

Is the ability to find, evaluate, manage and synthesize data, whether in analogue or in digital formats. Usually, data literacy involves understanding the meaning of data, including how to read charts and tables properly, drawing correct conclusions from them, and recognize when data is being used in a misleading or inappropriate manner. D'Ignazio and Qin define it as "the collection, processing, management, evaluation of data for scientific purposes and research" [21]. The facts are expressed in simple numbers to be understood in their entirety and related to an idea, so ideas give meaning to data and being literate in the use of data is essential for the information user in scientific contexts. Every day we use data to choose medications or health practices, to decide on a place to live, or to make judgments about the policy and practice of education. Newspapers and television news are full of data about nutrition, side effects of popular drugs, surveys choices and options on where to buy.

5.4. Statistical literacy

Its importance relies on the fact that in our modern time, statistics are the numerical reflection of the environment in which society develops, then, every decision must be made based on the data that there are statistics become the essential element to decide properly. A statistically literate person can read interpret, organize, critically evaluate and appreciate statistical information related to social contexts in which they are immersed [22-24]. Basically, a person who is competent at reading statistics must have two interrelated components to interpret and critically evaluate statistical information, data or arguments based on stochastic phenomena. Statistical data can find in various contexts, including the media, but not limited to them and statistical literacy deals with the ability to discuss or communicate the user views on such data when relevant [23].

5.5. Meta-literacy

It promotes critical thinking and collaboration in the digital age, which provides a comprehensive framework for effective participation in social media and online communities. It is a unified construction that supports the acquisition, production, and exchange of knowledge in the collaborative online communities. Meta-literacy defies traditional approaches to information literacy skills by recognizing related literacy rates and the incorporation of emerging technologies. There are even some viewpoints arguing that standard definitions of information literacy are insufficient for revolutionary social technologies now prevailing online [25].

The use of meta-literacy term suggests a way of thinking about literacy itself that requires individuals to understand their strengths on literacy and areas for improvement, and thus make decisions about their learning. The ability to critically assess themselves in different competitions and recognize the very need for integrated environment today's information literacies. The meta-literate individual has the ability to adapt to new technologies and learning environments, further comprising the combination of relations between the related literacies. This requires a high level of thinking and critical analysis on how to develop our own conception of users in a cognitive and social environment with open communication.

Basically, meta-literacy aims to develop critical thinking and collaborative social media and online communities. The meta-literate user is considered as an active participant, effective communicator, and interpreter of the information in multiple formats; this user think critically and reflectively about information, working independently and collaboratively; use, share, and includes information applied to emerging technologies and ask questions, express ideas in many ways that contribute to formal and informal academic conversations. In sum, meta-literacy deals with the way academic discourses are being constructed nowadays.

6. Discussion

As it might be noticed, the different literacy perspectives are aimed to the critical constitution of the user, raising the need to develop programmes that enable institutions to address these needs to effectively make use of academic discourses. In this way, literacies are tools to read the world and its social practices, is the way we understand, interpret and use the symbolic systems of our culture [26, 27]. The conventional understanding of literacy is directed to effectively read, write, and make sense of arithmetic symbols. Recent developments are expanding this definition by including a wide range of symbolic systems of reading, writing, watching, talking. Literacy therefore means nowadays to be able to combine these systems in complex ways to create meaning.

Then, how important are the literacies for today's society? Literacies prepare the information user for handling the new academic discourses and to be able participate in their creation and dissemination. This participation depends on the user's competences, which according to the European Commission in 2007 are: a) communication in the mother tongue; b) communication in foreign languages; c) mathematical competence and basic competences in science and technology; d) digital skills; e) lifelong learning; f) citizenship skills; g) sense of initiative and entrepreneurship; and h) cultural awareness and expression.

As an inference, there are quite a number of requirements for accessing academic discourse, which are not easy to achieve. However, at least in Latin America, these literacies have had little attention from the information professionals who have been focused on information literacy perspectives primarily. So what would be the role of the information professional in relation to these new scientific needs? In this context, the information professional have a very important challenge today, not only because in Latin America the digital divide is still very high, but also because the information professional is the between the individual and the information, at the midpoint, is or should be the focal point for narrowing this division. The effort needed is very high and the intervention of the information professional is urgent, in the words of Wolton, the fundamental mediators of information and knowledge of this new century will be the librarians, archivists, information professionals, and journalists, all of them work with the two most important types of information: the so-called information-knowledge and information-news [28], and a holistic view is necessary for understanding the new ways academic discourses are constituted.

7. Conclusions and recommendations

Understanding academic discourses needs the properly organization of the information from academic texts and documents; the recognition of the textual aspects that hinder and facilitate understanding of scientific meaning; the acquisition of metacognitive skills to regulate own understanding; the

understanding of how the various platforms on which the information is presented; and the interpretation of images, graphs, statistics and data. This set of requirements, skills and abilities to effectively address academic discourse sets the new agenda for academic literacy, which is a combination of efforts in five directions: visual literacy, media literacy, literacy data, statistical literacy and meta-literacy. These literacies will allow users to find information, interpret, evaluate, use and create images and visual media; access, analyse, evaluate and create messages in a variety of formats; find, evaluate, manage and synthesize data, whether in analogue or digital formats; read interpret, organize, critically evaluate and appreciate statistical information related to social contexts in which it is immersed; including the acquisition, production, and exchange of knowledge in online communities. In Latin America, efforts in Academic Literacy and Information Literacy should be joined, including the five proposed perspectives in developing literacy programmes in academic institutions.

The challenge for information professionals is for implementing strategies to take advantage of literacies since they are designed for the new demands of the current dynamics of production and consumption of information, specifically academic discourse in universities. In addition, information professionals should take an active role that becomes the connection that is needed for proper interaction between the student and academic discourses. They should take an active and proactive role to make effective use of academic discourses in order to disseminate scientific ideas and facilitate learning. The information professionals have a great opportunity to become the bridge that allows students the understanding and their participation in the production of academic discourse.

Information professionals, as we have said before, are facing a new landscape in academic discourses from a variety of formats in which is being produced and disseminated; this new reality demands a redesigned curriculum in literacy efforts, identifying and adopting the new literacies; reviewing and renewing them, if necessary.

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