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## **WEBSITES IN ACADEMIC LIBRARIES AS TOOLS FOR INFORMATION LITERACY**

*WEBSITES EM BIBLIOTECAS UNIVERSITÁRIAS COMO INSTRUMENTOS PARA A  
FORMAÇÃO DE COMPETÊNCIAS EM INFORMAÇÃO*

*SITIOS EN BIBLIOTECAS UNIVERSITARIAS COMO INSTRUMENTOS PARA LA  
FORMACIÓN DE ALFABETIZACIÓN INFORMACIONAL*

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**RESUMO:** Objetiva identificar nos *websites* das bibliotecas universitárias a prática da educação/formação de usuários por meio de produtos e serviços que podem ser fomentados tanto em ambientes tradicionais como digitais/virtuais na perspectiva da promoção de competências em informação dos estudantes. Pesquisa classificada como exploratória, estabeleceu em seu desenho como recorte duas universidades: a Universidade Federal de Alagoas e a Universidade Federal de Minas Gerais. A análise dos dados foi realizada com enfoque quantitativo e qualitativo. Adotou-se como instrumento de coleta o formulário, que proporcionou o levantamento de dados em 35 bibliotecas das duas instituições. Os resultados forneceram evidências de que as bibliotecas das duas universidades encontram-se em processos de transição ao se considerar o ponto de vista de uso da tecnologia digital para a potencializar as ações de educação/formação de usuário para desenvolver a competência em informação.

**PALAVRAS-CHAVE:** Biblioteca universitária. Competência em informação. Educação em biblioteconomia. Página Web.

**ABSTRACT:** It aims to identify on the websites of university libraries the practice of education of users through products and services that can be fostered in both traditional and digital/virtual environments with a view to promoting students' information literacy. Research classified as exploratory, established in its drawing two universities: the Universidade Federal de Alagoas and the Universidade Federal de Minas Gerais. Data analysis was performed with a quantitative and qualitative approach. It was adopted as a collection instrument the form, which provided the data collection in 35 libraries of the two institutions. The results provided evidence that the libraries of the two universities are in transition processes when considering the use of digital technology viewpoint to enhance user' education actions to develop information literacy.

**KEYWORDS:** Academic libraries. Information user instruction. Information literacy. Web Sites.

**RESUMEN:** Objetivo identificar en los sitios web de las bibliotecas universitarias la práctica de la educación/formación de usuarios a través de productos y servicios que pueden ser fomentados tanto en ambientes tradicionales como digitales/virtuales en la perspectiva de la promoción de competencias en información de los estudiantes. La investigación clasificada como exploratoria, estableció en su diseño como recorte dos universidades: la Universidade Federal de Alagoas y la Universidade Federal de Minas Gerais. El análisis de los datos fue realizado con enfoque cuantitativo y cualitativo. Se adoptó como instrumento de recolección el formulario, que proporcionó el levantamiento de datos en 35 bibliotecas de las dos instituciones. Los resultados proporcionaron evidencias de que las bibliotecas de las dos universidades se encuentran en procesos de transición al considerar el punto de vista de uso de la tecnología digital para la potenciar las acciones de educación/formación de usuario para desarrollar la competencia en información.

**PALABRAS CLAVE:** Biblioteca académica. Formación de usuarios de información. Alfabetización informacional. Páginas Web.

## 1 INTRODUCTION

Competence in information represents contemporaneously the individuals' abilities, knowledge and understanding in relation to the process of searching, accessing, using and communicating information in an ethical way based on information needs. The dimension of information competence is not restricted to information professionals, but extends to all individuals who use it in making simple or complex decisions, regardless of the spaces of their performance in society. Nevertheless, such competence becomes "a promising topic that can give visibility to the actions of information professionals and researchers" (Leite, et al, 2016, p 152). It is probably through this visibility that libraries, especially school and university libraries, can become protagonists in the development of information competence. Belluzzo and Feres (2015) consider them as centers of resources and participants in the teaching-learning process, therefore they become responsible for both the promotion and the development of such competence.

In the national scenario, it seems that university libraries have a greater responsibility for planning instruments that enhance the training of users in relation to information resources beyond the spaces and library collections (GOMES, 2016). Thus, a new look at their practices becomes necessary. When considering this perspective for university libraries, their websites may represent possible tools that enable information-related teaching and learning for the academic community.

Traditionally, user education, as existing practice in libraries, is understood as an effort that involves planning, execution, and evaluation, not simply isolated actions, to provide users with greater understanding and appropriate use of the information resources available to them (CAMPELLO, 2009; BELLUZZO, 1989; BERNHARD, 2002; FJÄLLBRANT; STEVENSON, 1978; FLEMING, 1990; KUHLTHAU, 2004; MEWS, 1972; TIEFEL, 1995).

The literature shows that the education of users has undergone theoretical-conceptual and pragmatic changes, much in function of the evolution of the informational supports, the advance and the implantation of the digital technologies in the libraries, as well as the presence of differentiated profiles of users. It agrees with the diagnosis given by Carvalho (2004, p.20) when he states that libraries "[...] face the transition from document stocks to the accessibility and availability of information and therefore need to review and redesign actions , products and services.". Based on this understanding, there is an interrelation between the practice of education / training of users and websites, which through their functions represent an instrument that can allow the individual greater ownership with respect to access, use and communication of the information to society, thus enhancing the development of information-related competence for the construction of knowledge and learning in the course of their professional and social trajectory.

The work presented here is the result of the third of a total of three stages of a broader

research developed with the Post-Graduate Program in Information Science of the School of Information Science of the Federal University of Minas Gerais (PPGCI/ECI/UFMG)<sup>1</sup>, a research whose main objective was to "analyze the contribution of actions and/or user education activities - in person and/or online - promoted by Brazilian university libraries linked to federal institutions of higher education, for the process of training information skills of its students/users, aiming at the construction of autonomous and conscious subjects in the conduction of the process of search and use of information.

Thus, for this stage of the research, the aim was to identify on the websites of university libraries<sup>2</sup> the practice of education/training of users through products and services that can be fostered in both traditional and digital/virtual environments with a view to promoting competencies in student information

## **2 WEBSITES**

The Web has become an essential resource in the library's interaction with users, because if this integration does not exist, even if it happens gradually, there is a risk that the library will disappear due to the lack of users (BAX, 1998).

University libraries (ULs) can use digital technology resources in a wide range of ways, from the management of internal resources, through the development of information/communication products and services, and interaction and collaboration with users. In this way, Cunha's (2000, p. 75) assertion can still be considered valid when he states that "... in the last 150 years, libraries have always followed and overcome the new technological paradigms.", specially because the author believes that ULs have always made use of the most varied resources derived from information technologies.

In this sense, Merlo Vega (2007) argues that libraries can be classified into three levels, according to their relationship with digital technology: passive, active and interactive. Passive libraries are understood as those that use digital technology internally in the

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<sup>1</sup> The research "From the education of users to the construction of information competence in the context of the libraries of the federal universities: a study from the Federal University of Alagoas and the Federal University of Minas Gerais" was approved in May/2015 by the Research Ethics Committee of Federal University of Minas Gerais, Statement n. 1,057,272/2015. The Research Ethics Committee of the Federal University of Alagoas approved the co-participation of this institution in October/2015. It is noteworthy that the first stage of the research was carried out with 2,133 undergraduate students from all areas of knowledge inserted in the undergraduate degree courses of the two universities. A synthesis of the first stage was presented in 2016 at the XVII National Meeting of Research in Information Science (XVII ENANCIB). The second stage of the research had the participation of 31 librarians/managers of university libraries, is being compiled and will be presented later. The complete research is available in the Theses and Dissertations Library - Federal University of Minas Gerais.

<sup>2</sup> It should be emphasized that the analyzes presented represents a photograph of the moment at which the data collection was performed. Probably, some of the libraries participating in the research are already in another reality, since after the collection of data there was no type of monitoring.

development of their activities, however, without offering services / information products to their users through the Web. Those that use the digital resources and electronic systems are understood as active, not only for its internal activities, but also in the development of services and network products for its users. In this case, the services and products of communication, information and reference are included; digital libraries and repositories; and competence in information (tutorials). Interactive libraries are for the author those who make participatory use of these technologies, receive and offer information through digital and electronic services. Such libraries design digital (interactive) spaces for the exchange of information and knowledge with users. Merlo Vega (2007) points out that through the social Web, the library can be used as an instrument both to offer new services and to innovate those already existing. It includes, as an example, the training of users, that is, they can provide information competence (CoInfo) and, thus, lifelong learning through online systems (blogs, wiki) or electronic platforms.

Amaral and Guimarães (2002, 2008) present six articulated functions that can be performed by the websites of the information units and denote possible capabilities to maintain an interaction between these units and the users as service providers and disseminators of information. The authors present a classification for the functions of the websites, such as: informational - ability to present to the user a broad view of the structure of the information unit and the institution to which the unit is linked; promotional activities - capacity to promote the information and information resources unit; instructional - the ability of the website to transmit to users ways of using the information resources available in both the traditional environment and those offered by the website itself; referential - the website's ability to serve as a reference system or access point for other information resources exceeding the traditional environment; research - ability to provide a variety and quantity of products and services online; and, finally, the communicational function - the interaction capacity of the website in the provision of tools to allow relationships between the user and the information unit.

When considering such functions, the website can be considered an instrument of communication or mediation between the library and the user (AMARAL, GUIMARÃES, 2002, 2008), so it becomes a discourse instrument, as it provides possible services, products, information, documents, tutorials for users, as well as technological tools used by libraries to promote user training.

### **3 METHODOLOGIC PATH**

Research classified as exploratory, since it was intended to investigate "[...] themes and objects based on new perspectives and to expand [or map] already existing studies" (HERNÁNDEZ SAMPIERI, FERNÁNDEZ COLLADO, BAPTISTA LUCIO, 2006) , in this case, to establish an optics on the websites of the ULs.

Content analysis (Web) is considered by Uribe Tirado (2012) as an appropriate tool to analyze the websites of libraries inserted in academic environments. For Haas and Grams (1998) the analysis of content allows to examine the pages in the Web and the links arranged in them. From this perspective, it is possible to locate, identify, organize, as well as evaluate and classify the information contained in the websites.

Two universities were established for the research: Federal University of Alagoas (UFAL) and the Federal University of Minas Gerais (UFMG), through the sampling by accessibility. Such sampling is considered in social research, since it allows, based on the principles of Gil (2006), that we use more accessible elements that are solely to the judgment / criterion of the researcher.

In order to determine the data collection instrument, the theoretical and methodological support of Amaral (2008), Amaral and Guimarães (2002, 2008) and Bardin (2004) were used. The first authors, for proposing in their studies a classification of the functions of the websites, which highlights the "instructional", which refers to the ability of the site to instruct the subjects in relation to the informational resources provided by the library both in the traditional environment , as well as through the website. There is, according to Amaral (2008), a rigidity about the items that make up a certain function of a website, these can be present in one or more functions. Already Bardin, for providing conceptual and operational elements that allowed greater security in the categorization of the elements that appeared in these sites and that were in line with the interest of this research.

Having this clarity, two actions were established: i-) inventory - survey of all the elements that are present in the site - observing that only the elements corresponding to the possible instruments of promotion to the education / training of the users were part of this action; ii-) classification - distribute the elements according to (pre) defined categories. Categorization which consisted of differentiating, regrouping and, later, associating elements or data in established categories (Chart 1).

**Chart 1** - Instructional function of websites by categories and elements in the investigated universities - UFAL and UFMG

<b>Instructional Function – websites</b>	
<b>Categories</b>	<b>Elements</b>
<ul style="list-style-type: none"> <li>• <u>Extension of the search process</u> - it encompasses the capacity of the site and the library to make available and expand search resources and location of sources of information, independently of those made available by the library.</li> </ul>	<ul style="list-style-type: none"> <li>• COMUT;</li> <li>• <i>Links to websites of other libraries, institutions and information services;</i></li> <li>• <i>Digital publications;</i></li> <li>• <i>Experts in a particular field</i></li> </ul>

	<i>of knowledge.</i>
<ul style="list-style-type: none"> <li>• <u>Orientation/instruction</u> – general and specific clarification about services and information products available both in person and online.</li> </ul>	<ul style="list-style-type: none"> <li>• Physical access to the collection;</li> <li>• Standardization;</li> <li>• Bibliographic research;</li> <li>• Procedures and regulations;</li> <li>• Use of the library;</li> <li>• Visits.</li> </ul>
<ul style="list-style-type: none"> <li>• <u>Network and social media</u> - structure that seeks the interrelationship between the library and the academic community for the sharing of information, knowledge and communication.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Blogs, email, Facebook, chats, Twitter and Whatsapp.</i></li> </ul>
<ul style="list-style-type: none"> <li>• <u>Training</u> - strategy used by the library to enable the subject greater knowledge and autonomy in the use of the information resources available in presence and virtual / online.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Online catalogue;</i></li> <li>• Database (BDTD, Scielo, specific databases to each area of knowledge);</li> <li>• CAPES portal of periodicals.</li> </ul>
<ul style="list-style-type: none"> <li>• <u>Tutorial</u> – a self-instructional tool made available through a computer program or a text that enables the teaching/learning process, detailing how to use information services and products.</li> </ul>	<ul style="list-style-type: none"> <li>• Programs;</li> <li>• Manuals;</li> <li>• Guides.</li> </ul>

Source: Research data, 2016.

Based on this framework, a form (Appendix A) was structured, which allowed the categorization of services directed to the education/training of users for both UFAL and UFMG. From the data of this form an analysis of the form was made, to verify if the represented services were potential in the development of competences in information in the users.

#### **4 ANALYSIS OF SERVICES FOR USERS - EDUCATION / TRAINING OF USERS: WEBSITES**

As an intrinsic part of this research, data related to the services and products made available on the websites of the libraries were collected. The data collected provided a descriptive-exploratory view of the indicative potentials for the education/training of users, both in traditional and digital/virtual environments, to enable the promotion of information skills and that provided subsidies for the analysis.

It should be pointed out that the collection act was limited to exclusively raising the available data and, therefore, there was no purpose to verify or analyze attributes such as: information architecture, design, navigation mechanisms, functionality of links and configurations, among others, since they did not conform to the objective of this investigation.

The presence of digital technology in domestic and professional environments, used for access and retrieval of information, causes a departure from the traditional physical spaces of information accumulation (BAX, 1998, CUNHA, 2010, DIB, LIMA, 2013 and DIÓGENES, 2012). Therefore, the absence of websites in BUs becomes more aggravating, becoming a barrier in the academic environment, as it causes the unavailability of institutional information, as well as the promotion of information resources; the impossibility of a relation of exchange and mediation between the library and the user (AMARAL, 2008; AMARAL; GUIMARÃES, 2002, 2008; SANTOS, 2012); the impossibility of access and use by the academic community of various information resources made available via the Web, regardless of time and space (AMARAL, 2008) and, consequently, the unavoidable distance of users from libraries.

Regardless of whether the library has a website hosted on its own server or if it uses the academic or administrative unit, it was found that of the 35 libraries participating in this research, 13 libraries (37%) did not have websites at the time of the investigation. Of this amount, 12 libraries are located at UFAL and one library at UFMG.

From this result, the research was restricted to 22 libraries, one belonging to UFAL - Central Library of UFAL (BC/UFAL), and 21 libraries inserted in UFMG - sector libraries and the Central Library of UFMG (BC/UFMG).

The five categories of analysis proposed, as presented in Chart 1, represent actions or activities directed to the education/training of users to enable the construction of competences in information.

#### *4.1 FIRST CATEGORY: EXTENSION OF SEARCH PROCESS*

It is related to the capacity of the site and the library itself to make available and expand the resources of searching and locating sources of information, independently of those available in the physical space of the library. One of the indicators proposed by the Association of College and Research Libraries (2000) for information competence is that students, in order to solve their information needs, identify and differentiate potential information resources in the most diverse formats and environments. In this sense, services such as COMUT and access to other information resources through links to various sources of information (institutions, libraries and informational materials) allow the user to broaden



their search process, thus not limiting access to available information only in the library space.

In UFAL, this service was found in the only library that had a website, the BC/UFAL, while in UFMG the service index reached 95% of the libraries.

Such services provided by libraries enable the student to recognize the value and sources of information in their area of knowledge and to establish feasible planning for the development of their academic research, considering the quantity, relevance, cost and time for obtaining and using the sources of knowledge. information. In this sense, the dissemination carried out by the library has its importance, however only the promotion becomes insufficient, the user needs to understand the functionality of the services in the context of the information search process so that it can, if necessary, make use of such services and products.

#### *4.2 SECOND CATEGORY: ORIENTATION/INSTRUCTION*

It assumes importance in establishing the link between the library, the user and the information, since it involves actions that consist in the clarification on the use of information services and products (BELLUZZO, 1989; FIGUEIREDO, 1991; FJÄLLBRANT; STEVENSON, 1978) that are also found in the virtual/online environment.

The orientation/instruction represents a broad and essential level, since it constitutes for many university students the first contact with a library and thus enables them to know the structure, operation and information resources made available by the library (BERNHARD, 2002, DOWNWARD, 1992, FIGUEIREDO, 1991). It is from this initial relationship that establishes the loyalty with the user, at the same time as it begins to internalize behaviors related to the search process, access and use of information and information resources, as one of the indicators of information competence for students indicated by the Association of College and Research Libraries (2000) presupposes the access and ethical use of the information by subjects who have notion of norms, laws, regulations and of the appropriate institutional policies.

The collection through the websites found that UFAL and UFMG adopted procedures with the purpose of indicating or clarifying about the products and services offered to the academic community.

The BC/UFAL website provided access to the User's Guide, with basic guidelines on norms and procedures and, even, directing the location of the books in the collection.

At UFMG, with respect to procedures, rules and regulations, three (14%) libraries did not provide this information through the website. Such information can be transmitted in

other ways to users, through leaflets, posters, printed guides, visits, in person, by email, among others. The UFMG User Guide, although it is a generic tool that disseminates information about the main services and products offered by libraries, is available in electronic format and was distributed by approximately eight (38%) of the libraries.

Another point to highlight are the visits, considered as initiatives to provide a closer approximation between the library, the user and the information materials (BELLUZZO, 1989; CARVALHO, 2008; DUDZIAK; GABRIEL; VILELA, 2000; FIGUEIREDO 1991; SILVA 1995) . It was observed that in the UFAL the visits happened by scheduling, and that the website was a virtual tour in the library. It was found that 12 (57%) of UFMG libraries explained that they offered this type of service, in the same way as in UFAL, through scheduling. In this sense, this action was not included as a practice by libraries and happened only in function of a demand.

On the other hand, a UFMG library provided video on the website and the same media was used to give users insights on how to perform basic searches in the online catalog. Also, within the scope of the UFMG, it is emphasized that the orientation was structured in the format of classes in two libraries. One of them, at the beginning of the semester, for research and standardization for the construction of academic papers. While the other offered guidance in the format of an expository class, however, it should be done through a teacher's request, thus indicating the de-characterization of a permanent library action. A third library provided an electronic presentation (Power Point) available on the site for freshmen and other users who had an interest in accessing it.

There were prevalence of visits and guidelines as generic actions. They were operationalized in the traditional environment and happened very much in the interest of the users, so the websites became an instrument that acted in the dimension of the disclosure of such actions or activities. It was not possible to detect collaborative actions for learning between the investigated libraries and the academic units in the virtual environment.

#### *4.3 THIRD CATEGORY: SOCIAL NETWORK AND MEDIA*

It even covers those libraries that do not have a website. At UFAL, through the BC/UFAL website, it was possible to detect that seven (54%) of the 13 ULs did not directly maintain this communication channel with the community at the moment of data collection. At UFMG, the index of network presence and social media reached all libraries, 22 (100%). This data is relevant, since it allows libraries greater dynamics of communication and relationship with users. The data corroborate Santos' research (2012), which detected an increase in initiatives through the social web to strengthen the approach and interlocution between the library and the users, however, the author warns against the lack of full use of communication tools as potential resource for access and use of information.

The results of this category indicate that the network and social media functioned as tools that enabled social interactive flows, resulting in the possibility of creating knowledge and learning, as well as fostering participation, mobilization and dialogues with users while at the same time empowering actions and practices of libraries. It is considered, then, a circumstance favorable to the libraries investigated the investment in resources of collective participation around the subjects in which information practices are inserted. For the Association of College and Research Libraries (2012) technology will continue to exert influence on ULs, so intensive use across networks and social media is set as a trend. Participation in electronic communication forums (email and chat room) is considered by the Association of College and Research Libraries itself as a medium that the informational student adopts to validate both their understanding as their interpretation of information, using interaction with other social actors (teachers, specialists and other professionals).

Communication tools represent true allies for libraries vis-a-vis new user profiles, possibly more connected to social networks (SOUSA, 2009).

Thus, the classification for education/training programs directed indirectly to users of the library, established by Belluzzo (1989), Dias and Pires (2004), corresponds to the use of digital technology, characterized by human-computer interaction and not only in person.

#### *4.4 FOURTH CATEGORY: TRAINING*

Training can be understood as an uninterrupted process or action of education (FIGUEIREDO, 1991) or strategies to develop skills in users (BELLUZZO, 1989), consequently, is associated with learning in relation to information (CAREGNATO, 2000), and use of the resources available through digital technologies (DIAS and PIRES, 2004). Wilson (1979) affirms that training benefits several social segments by enabling information-related skills. Training can also be understood as an innovation activity, when it is necessary to implement a new or improved product or process. (ORGANIZAÇÃO ..., 2005).

The survey carried out on the websites of the investigated libraries indicates the presence of BC / UFAL training aimed at the retrieval of information in electronic media.

In the UFMG, 12 (57%) of the libraries explained the existence of training, in seven (33%) there was no reference regarding the provision of training for the academic community and, at the time of data collection, two (10%) BUs websites were off the air or in maintenance and a library did not have a website available. Of the 12 libraries that presented this type of action, it was verified that: the training was mainly related to the Portal of Periodicals of CAPES, followed by other types of training, independently of this Portal, as search and use of the archive's collection, and databases in specific areas. It was also possible to verify that, among these libraries, the training appeared referenced through the internal regulation or, even, without a proper specification.

Research conducted with a focus on information competency in higher education reveals that training makes such competence possible, as it enables users to be more apprehensive in search strategies, as evidenced by Pereira (2011). In the study by Melo (2008), the absence of training is revealed as damage to the development of information-related skills for the students and even opportunities for the use of communication tools to become a new option for the traditional training in function of differentiated user profiles.

However, it should be clarified that at university, subjects have multiple behaviors and attitudes towards digital technologies. With this breadth of profiles, training is necessary for the academic community, empowering to a group considered as digital natives greater knowledge regarding specialized and specific sources of information in their area and also for those who are unaware of the symbolic system of technologies digital products and information products and services; probably due to the need for training in digital environments, because the training in the university context reveals actions to learn the practices of the use of information resources, mainly due to the presence of electronic resources.

It cannot be understated the development of online tutorials that, according to Hatschbach (2002), are institutional pedagogical technologies that allow virtual training and, according to the author, make the students' autonomy possible.

#### *4.5 FIFTH CATEGORY: TUTORIAL*

In this category, the tutorial as a teaching/learning tool or instrument allows self-learning, so that the student, without help from others, obtains guidelines/instructions to access certain services and/or products made available by ULs, regardless of physical or geographical location of individuals and documents.

In three (14%) of the UFMG libraries the websites were under maintenance/construction during the data collection period. It was verified the existence of a specific link titled tutorial in the architecture of the website of four (19%) of the UFMG libraries. However, it should be noted that 14 (67%) of the libraries of UFMG and BC/UFAL did not have a specific link that led to a tutorial.

It was found, where possible, that the information in this category - tutorial - was found differently on the websites and the tutorials were linked to the information providers themselves, whether national or international. The tutorial, in this regard, sets itself up as a unique instrument of producers for an indefinite number of actual and potential users. Thus, such tutorials do not always reflect the difficulties of local students in the search for and access to information in their areas of knowledge. In a way, this calls attention to a challenge for libraries and librarians, since the researches of Hatschbach (2002) and Piccolo (2009)

legitimize the participation of librarians and the cooperation of other professionals in the development and implementation of tutorials in ULs.

The participation of librarians in the elaboration of tutorials becomes necessary and justifiable, since it is these professionals who have the responsibility to enable the subjects to use the library and the information resources (CAMPELLO, 2009).

Loerstcher and Woolls (2005) argue that the use of information technology in the architecture of tutorials and electronic booklets is a way for the library and librarians to become involved in the development of these products/services for users. Still, Hatschbach (2002) points out the tutorials as a possibility for students, in addition to acquiring autonomy, to become responsible and learners of technologies for both their academic and professional training. The data show that a total of seven (32%) libraries between UFAL and UFMG developed standardization guides / manuals, through librarians and even teachers linked to the Librarianship course at these institutions, academic community step-by-step to ensure standardization of documents, veracity of information sources, protection of copyright and improvement in scientific communication; these aspects are decisive in the training of students for information competence, since they involve ethical, legal and social issues in the use and communication of information.

In UFMG, it was also detected that in one library there was cooperation between librarians and another professional from another area in the development of a tool for the academic community - a bibliographic manager.

The reality verified during the process of data collection presents a result that is projected as a challenge and also an opportunity for libraries, the development of online tutorials for virtual training, since it was not possible to establish their existence.

## 5 FINAL THOUGHTS

The websites of the ULs investigated fulfilled, until the moment of data collection, two main functions: an informational one and a referential one of their services and products, with a greater focus on face-to-face actions over virtual/online ones. It was not possible to identify, through the websites, partnerships between and within libraries with their academic units for the development of a program or even actions for information competence. Terms such as "orientation", "instruction" and "training" were used in a generic manner indicating isolated or punctual actions, much in function of a demand; such actions are the only ones used by the ULs to provide the academic community with a greater approximation to the information resources and, from there, to bring about a change in behavior (academic, personal and professional) in relation to these resources.

Also, it was not possible to verify the establishment of a virtual program for the formation of competencies, thus indicating that libraries did not use the potential of technological resources, being timid actions in relation to the learning process involving information and, consequently, absence of articulation between the library, the teachers, the students and the academic / administrative units for the promotion of information skills.

The analyzes of the websites presented converge to conform, according to the classification proposed by Merlo Vega (2007), that the libraries of the two institutions were classified, according to their relation with technology, in different transition processes.

Considering the point of view of using digital technology to promote user education/training actions to foster information competence, UFAL found itself within the passive to active level, since only BC/UFAL had a website up to the data collection, impacting the information services/products made available to their users through the web. This implies a greater responsibility for such a library to promote access to services and products to the academic community, while at the same time it assumes visibility for its actions and presents itself as a reference for the other sectoral libraries of this institution.

In the case of UFMG, the transition occurred at all three levels, from liabilities to assets and from that to the interactive. This transition can not be considered in a generic way, because the libraries of this institution attend specific areas of knowledge and, consequently, do not present the same level of resources and alignment with each other in relation to the offer of services and products in information through the Web.

However, there are numerous practical challenges to be integrated by the UFAL and UFMG libraries in their actions so that the training of users reaches the interactive level, as a means of instrumentalizing users through online systems or electronic platforms so that, in this way, they can form competence in information.

Among the challenges to be faced is a series of attitudes, activities and resources that libraries and librarians should undertake, and among these challenges are those presented in the studies of Belluzzo (2010), Ducas and Michaud-Oystryk (2003) and Hernandez-Hernandez (2010). It is possible to highlight those that are feasible within the scope of BUs investigated in this research, such as: the insertion of information competence as part of the university's strategies; Competence must encompass all grades; the library should receive institutional support and be given time to develop programs and training materials for the academic community, initially for graduation; the library needs to plan learning assessment activities, as well as to develop marketing actions; develop and / or improve the technological resources for the implementation of online programs; provide new and better competitive information services; integrate and mobilize librarians, teachers and other professionals of the university to develop in partnership instruments aimed at the information skills in students; higher performance on the part of librarians to act in the field of education related to

information; and the participation of the librarian in research projects with the faculty of the universities.

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## APPENDIX A

Form example of the one used in data collection in universities' websites.

INSTRUCTIONAL FUNCTION - WEBSITES	UNIVERSITY XYZ													
	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14
WEBSITES - LIBRARIES	•	•	•	•	•	•	•	•	•	•	•	•	•	•
CATEGORIES	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14
EXTENSION OF SEARCH PROCESS	•	•	•	•	•	•	•	•	•	•	•	•	•	•
ORIENTATION/INSTRUCTION	•	•	•	•	•	•	•	•	•	•	•	NA	•	•
SOCIAL NETWORKS/MEDIAS ( <i>blogs, email, Facebook, chats, Twitter and Whatsapp</i> )	•	•	•	•	•	•	•	•	•	•	•	•	•	•
TRAINING	NA	•	•	•	•	•	•	•	•	•	•	NA	•	NA
TUTORIAL ( <i>links</i> )	•	•	•	•	•	NA	•	•	•	•	•	•	NA	NA

**Captions:** L - Libraries  
 NA – data not available  
 • - located data

