

# Connecting new trends and new skills for Academic Librarians <sup>1</sup>

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**Abstract.** Guiding documents of professional associations are revealing the main future trends around the globe in information sciences. This study seeks to systematize and identify the skills expressed in them and aimed at information professionals. Thus, the content of the guiding documents is analyzed to find the trends for the area, systematizing them in areas of interest. The skills needed by the professionals that emanate from it are identified. In addition, a survey of future professionals (graduate students) is carried out to try to understand what skills are valued in the future performance of their profession. It is noted that it is important to be aware of current trends and recommendations for the sector. Therefore, the preparation of students in information science for the prospects for the future will be more appropriate and meaningful, bringing benefits to themselves and to the academic communities in which they operate, if future higher education librarians become aware of a changing world in which they will have to act.

**Keywords:** Information skills; higher education; librarians; professional skills.

## 1 Introduction

Recently, librarians' associations around the world have been reflecting on the professional development of their members. At the same time, researchers and practitioners seek to think and act following the contextual evolution of the profession [1-3]. Growing and diversified information to manage, submerging technologies that need to be mastered, spaces that take on new roles, the growing context of open science, the systematic evaluation of research and bibliometric, and the multiplicity of requests from users who call for updating their information literacy, require new and updated skills from these professionals. In higher education, whose social mission is to educate

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future generations, create knowledge and ensure innovation in all subject areas of the public sphere, meeting emerging trends is imperative. This paper reflects on the current context regarding the competences of the librarian, namely who works in higher education, trying to demonstrate how these competencies should be a response to the new trends. This is verified in the guiding documents of national professional associations [4] and international relevant institutions [5], consolidating and strengthening the daily professional practices. The skills required to information professionals are collected in the key guidance documents ruling, complemented by current published studies. The main areas are clarified, creating action clusters, proposing an articulation of these with the learning, teaching, and research needs to design a skills map for future librarians. Training skilled librarians' means being aware of current trends and recommendations for the area. Thus, a questionnaire survey is applied to students in Library and Information Sciences (LIS) to assess their perception of the librarian's new roles and competencies. The results should be motivating factors for academic institutions in their commitment to provide conditions for the continuing education of information professionals, but also for the professionals who are already in the field, who must permanently seek their updating.

To this end, a two-step investigation is presented. In the first stage, an exploratory survey of the strategic references emanating from professional associations and national and international organizations related to information professionals is carried out. The criteria for choosing the documents to be analyzed were the timeliness and its strategic vocation, that is, if they are current and include the explanation of trends in information science. The content analysis of each of the documents made it possible to list a set of skills that professionals must master. In a second stage, a survey is applied to LIS students, undergoing training to become future librarians, with a view to understanding their perceptions regarding the skills to be developed.

## **2 Future Trends and Future Skills in Academic Libraries**

### **2.1 Needed skills for librarians**

Several studies on innovation in academic libraries have already been carried out [6-9]. They all converge on a central idea: the academic librarian's role is fundamental to change and innovation. Whether it is about studies focused on technology and its impact on libraries, organizational structure, or leadership, the key to understanding innovation lies in the vision held by the main actor - the librarian. Academic librarians should therefore be encouraged to understand this changing environment as an additional challenge, preparing to face conditions and facing them as opportunities for improvement, assuming their central role in this process. To this end, it is important to invest significantly in developing and adapting their professional skills.

The meaning of competence [10] can vary in different contexts and generally refers to the quality of a person's mental or physical abilities. In the professional field, competence is related to a certain ability to do a job, to be successful, to actively

participate in actions or processes, or even to interact properly with other people in different contexts.

Librarians' skills have been widely discussed in the specialty literature. In Portugal, with no formal updating of professional requirements, the guidelines of the defunct European Council of Information Associations [11] continue to prevail, whose Portuguese translation the Portuguese Association for Information Management (Incite) published in the same year of 2005. In this guiding document the five groups of competencies and skills of European information-documentation professionals were formed: Information: basic knowledge of the professional relating to the information documentation; Technology: skills related to computer and internet technologies; Communication: skills related to interlocution and internal and external communication; Management: skills related to budget, project marketing, human resources, training, and pedagogical actions; Other Knowledge (specificities). The twenty main skills were also listed, mentioned as dispositions of spirit, grouped in the following topics: relationship, research, analysis, communication, management, and organization. This document, although dated, remains quite comprehensive, demonstrating that the dynamic surrounding does not prevent a certain continuity of required characteristics, being certain that the adaptation to new and demanding responsibilities will be one of them. In a recent study [12], resuming an attentive observation of the international debate around the new skills of the information professional emerges an intense reconfiguration of the profession. The idea of the relationship between public and European policies is reinforced given the options and models of teaching existing in universities to train these professionals.

Some years ago, another study proposed to reflect on these characteristics [13]. Approximately two hundred job advertisements for the area were analyzed, employability requirements with more occurrences, such as qualifications and skills, were identified and serialized. The most significant areas mentioned by potential employers were certification in Information Sciences, work experience, followed by skills in communication, organization, collection management, and teamwork. In addition, competencies were mentioned in the area of user training and in the area of digital content management. Also in 2009, in an observation made in New Delhi [14], academic librarians were asked about their perception of the most relevant competencies for the profession. The choice identified as the most important fell on communication, followed by competence with technologies. Management, organization, research, marketing, and negotiation skills were also indicated. Later, some investigations began to focus on the impact of the digital age on the reconfiguration of the skills of information professionals, identifying the contextual changes that demonstrate a more direct impact on the performance of librarians [15-16]. These works stand out as changes in higher education, technological developments, the nature of academic communication, user obligations, legal issues, such as changes in spaces, or the need for collaborative work. In a panoramic and in-depth investigation [17], the study on the skills of librarians is systematized, focusing on more piecemeal works that, in turn, focus on the classification characterization of librarians skills, according to the areas they work in and the roles they assume (management, collections, technologies, reference, among others), proposing, in several cases, a descriptive

professional profile.

In 2016 three documents present the characterization of partial profiles for information specialists working in academic libraries. The documents issued by the Joint Task Force on Competencies for Librarians in Support of Research and Academic Communication, disseminated competency profiles that professionals must develop: from sources management to support new functions, specifically in the areas of academic communication and research in the digital age. As explicit in the general objectives, these profiles will enable library managers to identify skill gaps in their institution, form the basis of job descriptions, enable professionals to carry out self-assessments, and act as a foundation for the development of training programs for librarians and library professionals. This Task Force brings together representatives from the Research Library Association (RLA), the Canadian Research Library Association (CARL), the European Research Library Association (LIBER), and the Confederation of Open Access Repositories (COAR), being, therefore, an indispensable contribution to reflection and action in the matter under consideration. In these documents [18-20], it is shown that libraries are at the forefront of digital transformation and digital information infrastructures, in addition to taking on the management and curation of collections and cultural heritage and, therefore, support for research and digital communication; data management is also included, a task that requires a high level of interaction with researchers and also promotes interaction with other support services, including technicians; finally, they are firm as library activities that fit into academic publishing services; open access repository services; advice on copyright and open access; and evaluation of academic resources.

A 2018 study collates the needs of researchers in the field of digital humanities with the profile of the open digital librarian and several common characteristics, which are based precisely on the digital ecosystem in which both professionals move (access platforms, digital files, databases) [21]. Both have to know how to handle information and be up to date and moving in areas such as Big data, scientific data, routing, website management, database building, social networks, dissemination, publication, collaborative work, and issues of copyright. In the path of professional updating and preparation for a profession, an investigation points out nine domains of personal competencies that are most relevant to information professionals, namely: critical thinking, interaction, relationship, leadership, presentation, and communication skills. media literacy and written skills [22]. These were determined based on the literature on communication and personal skills.

It can be seen, therefore, that in view of the objectives of academic libraries (which include, in addition to the management of collections, spaces, and resources with a view to supporting teaching and research), the libraries continue their mission of updating their roles, through the changing context. The evolution of the academic library mission can be seen when looking at the new roles currently played by its librarians: editor of digital academic content; designer of online publications; scientific data librarian; web content specialist; digital preservation librarian; digital humanities librarian; digital repository manager; data visualization coordinator - and, therefore, the list of roles involved in supporting digital scopes increases the range of performance of these professionals, who seek to respond to the challenges presented by their users - students,

but also teachers and researchers [23]. In summary, the analyzed literature reveals an evolution of the profile required of academic librarians, particularly if one considers a diversification and comprehensiveness of their areas of activity, opting, in the most recent studies, to subdivide and deepen each of the areas of professional skills; “This differentiation can benefit the creation, development, and acceptance of new profiles, accelerating the needs of the labor market and, finally, consolidating a vision for information science in higher education” [12, p.37].

The updating skills challenge in academic librarians is evident: matching the new trends in the sphere of information sciences to an updated, diversified, competent, and committed performance with the expectations of their audiences, scholars, and researchers, promoting and supporting the Open Science movement, in a context of wide change.

### **3. Methods**

#### **3.1 Content Analysis**

In a first stage, an exploratory study of the strategic references emanating from professional associations, and national and international organizations (related to information professionals’ competencies) is carried out. Elected documents are in effect and have a strategic vocation. Inspired by the reference documents, the main trends for the area of academic libraries is grouped by performance clusters.

#### **3.2 Questionnaire Survey**

In the second stage, a questionnaire survey was applied to future librarians. This aimed to analyze the perceptions of students of Library and Information Science (LIS) regarding the skills that professionals in the field must develop. It is observed that the skills that students value for their learning and those they value in professionals in practice, particularly those who practice the profession in higher education. The study was confidential and guaranteed the participants anonymity.

### **4. Results and Discussion**

#### **4.1. Future trends in the main guiding documents**

In the first stage of this study, criteria were defined for the choice of documents to analyze: their guiding outline and strategic profile, which enables an understanding of the surrounding environment at a macro level. It means that these documents are recognized, accepted, and potentially adopted by their professionals’ community, providing these actors with orientation for their performance, since they explain future

trends in information, particularly in higher education. Additionally, its timeliness was confirmed by its chronological scope. A global search of this type of documents was made, checking if they come from countries traditionally designated as a reference for the Portuguese academic librarians in Portugal. The results of this research make it possible to list the producer organisms or associations, the documents under analysis, and the countries of origin and their influence area (Table 1).

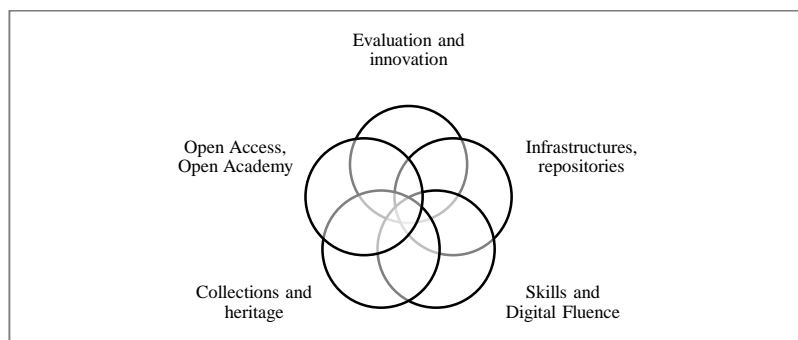
**Table 1.** Strategic current documents recovered

ORG.*	DOCUMENT	ORIGIN / INFLUENCE
ACRL/ALA	<i>Standards for Libraries in Higher Education (2018)</i> <a href="http://www.ala.org/acrl/standards/standardslibraries">http://www.ala.org/acrl/standards/standardslibraries</a>	USA
ALIA	<i>LIBRARY AND INFORMATION SERVICES: The Future of the Profession Themes and scenarios 2025</i> <a href="https://read.alia.org.au/library-and-information-services-future-profession-themes-and-scenarios-2025">https://read.alia.org.au/library-and-information-services-future-profession-themes-and-scenarios-2025</a>	Australia
CARL	<i>Strategic Framework - May 2019 to May 2022</i> <a href="http://www.carl-abrc.ca/wp-content/uploads/2019/06/Strategic-Framework-May-2019-to-May-2022.pdf">http://www.carl-abrc.ca/wp-content/uploads/2019/06/Strategic-Framework-May-2019-to-May-2022.pdf</a>	Canada
CAUL	<i>CAUL's 2017 - 2019 strategic plan</i> <a href="https://www.caul.edu.au/about-caul/strategic-directions">https://www.caul.edu.au/about-caul/strategic-directions</a>	Australia
EDUCAUSE / NMC	Alexander, B., Ashford-Rowe, K., Barajas-Murph, N., Dobbin, G., Knott, J., McCormack, M., ... & Weber, N. (2019). EDUCAUSE Horizon Report 2019: Higher Education Edition (pp. 3-41). EDU19. <a href="https://www.learntechlib.org/p/208644/">https://www.learntechlib.org/p/208644/</a> .	USA
IFLA	IFLA Strategy 2019-2024 <a href="https://apo.org.au/sites/default/files/resource-files/2019/08/apo-nid257531-1384991.pdf">https://apo.org.au/sites/default/files/resource-files/2019/08/apo-nid257531-1384991.pdf</a>	World
LIBER	Research Libraries Powering Sustainable Knowledge in the Digital Age <a href="https://libereurope.eu/wp-content/uploads/2017/11/LIBER-Strategy-2018-2022.pdf">https://libereurope.eu/wp-content/uploads/2017/11/LIBER-Strategy-2018-2022.pdf</a>	Europe
REBIUN	<i>Cenários do III Plan Estratégico de REBIUN 2020</i> <a href="https://www.rebiun.org/sites/default/files/2017-11/Plan%20Estrat%C3%A9gico%20REBIUN.pdf">https://www.rebiun.org/sites/default/files/2017-11/Plan%20Estrat%C3%A9gico%20REBIUN.pdf</a>	Spain
RLUK	<i>Reshaping Scholarship Strategic Plan</i> <a href="https://www.rluk.ac.uk/reshaping-scholarship-rluk-strategy-2018-21/">https://www.rluk.ac.uk/reshaping-scholarship-rluk-strategy-2018-21/</a>	UK
SCONUL	2019-2022 Strategy <a href="https://www.sconul.ac.uk/sites/default/files/documents/SCONUL%20Strategy%202019%20-%202022.pdf">https://www.sconul.ac.uk/sites/default/files/documents/SCONUL%20Strategy%202019%20-%202022.pdf</a>	UK and Ireland

\* ACRL – Association of College and Research Libraries, American Library Association; ALIA - Australian Library and Information Association; CARL - Canadian Association of Research Libraries; CAUL – Council of Australian University Libraries; EDUCAUSE / NMC – New Media Consortium; IFLA – International Federation of Library Associations and Institutions; LIBER - Ligue des Bibliothèques Européennes de Recherche – Association of European Research Libraries; REBIUN -Red de Bibliotecas Universitárias Españolas; RLUK - Research Libraries UK; SCONUL – The Society of College, National and University Libraries.

After this research, an in-depth reading of each of the documents was carried out, extracting the main concepts associated with the with the core competency domains that librarians have to developed. It became clear that the centrality of the library is

associated with Learning and Research, but the documents also highlight the great themes of open access, the digital environment, content management, and the development of resources and skills of professionals.



**Fig. 1.** Core Competency Domains

The Open Science movement has definitively transfigured the areas of activity of academic librarians. There is currently talk of openness, in a broad sense, involving open access, Open Science and open education, in order to ensure the transparency and reproducibility of science. The impact is visible throughout the research cycle; also, it is necessary for librarians to be prepared to continue to support learning and research from research to publication. To this purpose, it will be essential to deal with the need for research and storage and information data, as well as its description, curation and dissemination. New pedagogies based on flexible and technology-based learning continue to require close monitoring, and it is desirable to ensure digital fluency for professionals and users. Finally, the functions of custody and preservation are not forgotten: the collections remain a hard core of the librarians' activities; however, its diversity and scope have increased, including, in addition to heritage concerns, the need for inclusion, diversity, connection and reach, so the infrastructure aspects remain highlighted. It is possible to confirm the ideas of some studies [24-26] that indicate a global tendency to change the focus of action: the shift from centralizing the management of collections and the provision of content to that of service providers and access facilitators, services each increasingly made to measure and adapted to each concrete reality. In this sense, “skills of library and information professionals will once again be recognized, especially the ability to detach ourselves from the specific content and instead concentrate on the metadata around it. ‘Find, filter, connect’ will become the mantra of our profession and organizations will be eager to recruit our members, to help them find a way through the mass of intelligence, which is useless without a guide and interpreter. The most desirable skills will be a combination of information, knowledge and records management” [27, p. 29].

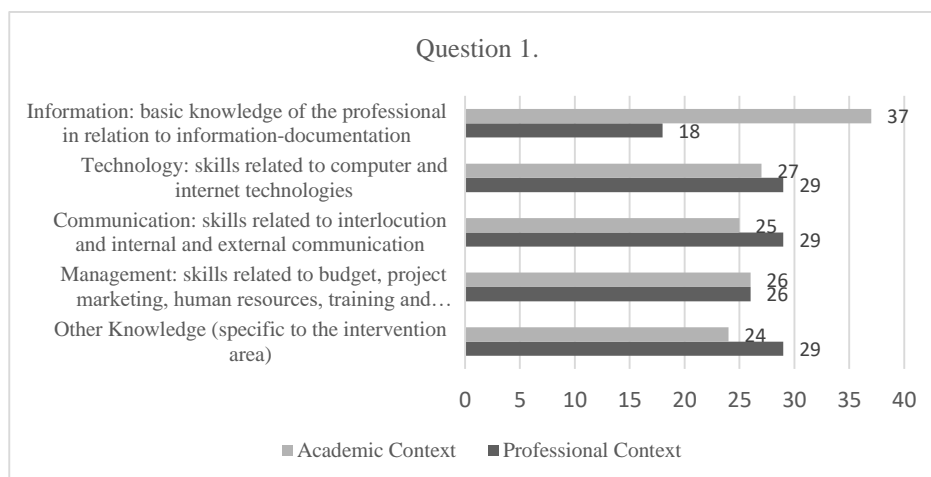
#### **4.2. Perceptions of the information skills needed**

In the second stage of the research, a survey was carried out to LIS students,

undergoing training. The main objective was to understanding their perceptions regarding the skills to be developed. The data collection instrument was a questionnaire with three closed questions and an open question, which allows a quantitative and qualitative analysis. The questionnaire was developed using Google forms, and distributed in the authors' social networks, and sent by mail to a list of university institutions, for one month (April 2021) in Portugal. The first set of questions were to identify the respondents: gender, age, and study attending degree). The sample consists of 45 valid responses from the survey, 33 (73.3%) are female, and 10 are male (22.2%); two prefer not to answer. Regarding the degree attended or completed, the students were divided: seven (15.6%) from undergraduate course, 13 (28.9%) from doctoral studies, and the majority, 25 (55.6%) from master degree.

The second part of the survey included three questions, all quantitative.

Question 1: In 2005, five groups of competencies and skills of European information-documentation professionals were defined. Among these, which ones do you consider to have acquired in your training? And in a professional environment?

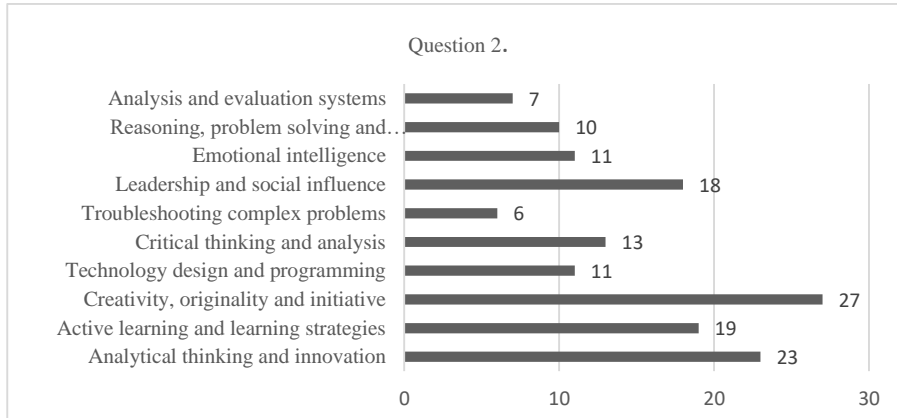


**Fig. 2.** Acquired Skills in Academic and Professional Contexts

Most competency-based approaches are based on the need to train professionals and to establish a profile of skills outside basic training. In addition to basic training, to demonstrate competence, it is necessary to have adequate levels of understanding and ability to act in a given environment, that is, a set of knowledge, skills, and attitudes mobilized for high performance in a given professional situation. In the answers to this first question, it is observed that academic competencies are more generic and related to the scope of documentation and information. Those that are preferably acquired in a professional context seem to be related to specific knowledge of the intervention area.

Question 2. The World Economic Forum foresees ten areas of competence for professionals in the next decade. From your point of view, which will be the three most important for librarians to develop?

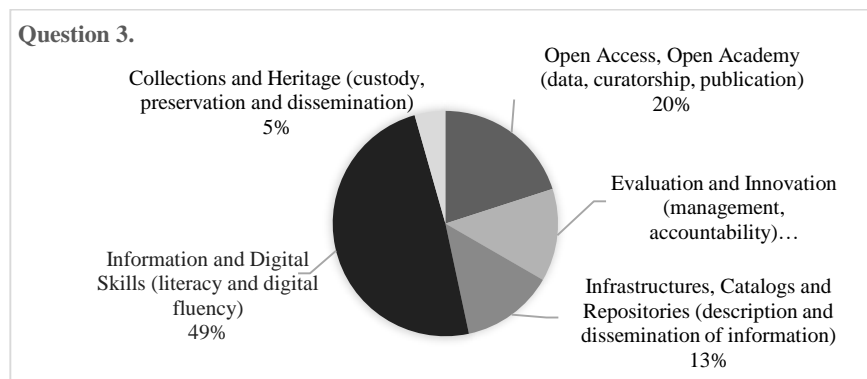




**Fig. 3.** WEF areas of competencies

In each area of expertise there are skills required. It was questioned to the students, from the inspiration bequeathed by the World Economic Forum [28], providing ten areas of competence for the next decade, which they considered to be the most important. Respondents choose creativity, originality and initiative first (27, 60%); analytical thinking and innovation (23, 51.1%); and finally, active learning and learning strategies (19, 42.2%), closely followed by leadership and social influence (18, 40%). All choices are considered to be interconnected with the requirements of areas of expertise emanating from the guiding documents, revealing an alignment and confirming the pioneering, scope and transdisciplinarity of the information and documentation area.

Question 3. Currently, information management requires professionals who are well prepared to work in different environments. Which area do you choose as the most important, in the near future, for librarians (particularly those working in higher education), to develop professional skills?



**Fig. 4.** Most important area to develop

Previously, based on the analysis of the guiding documents, it was possible to reach the five areas of competence for future professionals. In this question, the respondents

commented on which they thought was the one that needs more investment in the near future. Information and digital skills (literacy and digital fluency) clearly show to be the preference of respondents (22, 49.%). The technological areas are clearly highlighted and the issues related to open science and infrastructures appear as the following choices. Future librarians seem to be particularly sensitive to the need to develop skills in these areas. Finally, the third part of the survey included an open question. The qualitative analysis refers to the data obtained from the 9 comments left by the respondents in the space intended for the purpose. The qualitative data show that some students perceive their academic training as too theoretical: "on master's degree learns theory, but the real world is very different. We lack the practical part, the skill to apply. We feel lost and despite having an academic 'degree' seems that in practice we know nothing. In my view there is a huge job to be done in terms of the training professionals, the affirmation of the professional class, their appreciation and the skills to be developed". In addition, they criticize the way the curriculum is constructed: "Information and Documentation courses in Portugal are not currently preparing professionals in this area for the challenges of the coming decades in terms of skills. Masters, are a distortion of what were the postgraduate courses in the late 90's and 00 focussed on a strong technical component. The academic courses are a potpourri of generalities, not deepening the themes that can prepare future librarians to be leaders in their field". Students also reveal that future professionals will need to develop leadership skills and a strong strategic, technical and social position and the full ability to show "what they are in the world for", as we move towards a scenario in which digital literacy should be basic competence of almost all professionals.

## **5 Conclusions**

Attentive and better-qualified professionals enhance their performance, bringing advantages to the institutions of which they are part and to the users with whom they deal. Institutions, teachers, and students benefit from the investment in knowledge and learning of information professionals, which is revealed in greater expertise and professional competence in the service, in the answers to the reference questions, in the management of collections, spaces, human resources, and information, in the teaching skills and supporting research in its various aspects. This means knowing in-depth information resources, terminologies, methods, and professional practices, in order to respond adequately to each request, in addition to a permanent update of transversal skills to all documentation and information professionals, which include a visible adaptation to the demands of the Open Science movement and its implications. A very recent study raises concerns regarding the updating and professional development of librarians, but points out some solutions, identifying the need for continuous training on the part of employers [29], the creation of positive and dynamic learning environments and, above all, participation in cooperation networks and social networks as excellent opportunities for professional growth and updating. The consequences of improving librarians' skills, which imply keeping abreast of current trends and recommendations for the sector, include tangible benefits in reducing costs, optimizing resources for the management of libraries, management of knowledge, collections, and information,

increasing students' academic success, improving teaching requirements and enhancing the conditions for the production and projection of developed research. These results should be motivating factors for higher education institutions in their commitment to providing conditions for the initial training of librarians, but also for the professionals themselves, who must constantly seek to update them. Studies like this should be pursued in order to contribute to the visibility and influence of librarians, but also to accountability and commitment to the profession and its impact on higher education.

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