

## International standards for information literacy: the inspiration for national practices

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### Abstract

Librarians working in higher education want to support students in the pursuit of their academic work, based on the good use of information. To this end, they need to know the emerging pedagogical changes that they can take advantage of when designing their courses, integrating this knowledge into a more segmented, clear, and objective training offer, based on international references, published in the last decades, since the ACRL Standards, until the ACRL Framework. The attention given to these documents can prepare librarians for the necessary updating of skills, supporting innovation, and best practice achievement. This paper aims to systematise the evolution of concepts and practices of information literacy guidelines in higher

education and identify their inspiration for the creation of Portuguese guidelines. An exploratory inventory of international information associations was carried out to identify information literacy guidelines. The content analysis of these guidelines allowed the identification of pedagogical trends in the performance of libraries and their professionals. The analysed contents show an interpretative evolution of the guidelines, converging in the ACRL Framework and the contents of the Portuguese recommendations for academic libraries for the period 2020–2022. It is evident that updating skills for librarians requires not only an awareness of sector trends, but also transforming them into good practice and recommendations appropriate for the national context.

**Keywords:** Information Literacy; Higher Education; Competencies; Learning; Teaching; Portugal

## 1. Introduction

For academic librarians, more resources, particularly information resources, should cause them to question how they should improve the teaching of information skills. Librarians mustn't see the changes as a threat to established working practices, but as an opportunity for more in-depth, cross-curricular, and more appropriate training that will be reflected in the services provided to faculty, researchers, and students in higher education to adequately meet academic needs. The present work is based on the premise that a collaborative effort must be made to benefit from international examples. To this end, librarians should be aware of what is happening in the professional world, particularly regarding pedagogical guidance for the application of information literacy (IL). These documents can prepare librarians for the necessary updating of skills, supporting innovation, and the achievement of best practices. They can then, in the national context, identify which strategies will be most appropriate for developing recommendations, programmes and training. Several strategies have been followed at the international level, either in professional forums, such as the International Federation of Library Associations and Institutions (IFLA), or through the documents that are put out for public consultation, for example, user education librarians hosted a teaching circle designed to get librarians reading, talking, and discussing the ACRL Framework (Association of College & Research Libraries L, 2016), as previously explored in several studies (Berg, 2020; Julien et al., 2020).

In the case of Portugal, it has been important to discuss national intervention strategies within the national association of information professionals (Associação Portuguesa de Bibliotecários, Arquivistas e Profissionais da Informação e Documentação – BAD). At the beginning of 2020, the Working Group for Academic Libraries (GT-BES) published the *Recommendations for Academic Libraries 2020–2022* (Príncipe et al., 2020). The first recommendation, integrated into the teaching and learning dimension, refers to the importance of strengthening skills in IL and advocates the strengthening of IL skills aligned with users' needs, the establishing of training strategies for diversified audiences using varied formats and channels, the offer of quality training programs that include integrative approaches, the definition of learning objectives and also to plan using international standard references. This paper aims to systematise the evolution of concepts and practices in IL academic guidelines at the international level and explain their application to the recommendations of academic libraries in Portugal.

## 2. Literature review

The understanding of the multiple ways in which knowledge about IL has circulated across the world has already been the subject of reflection. Examples of this are longitudinal studies (Kolle, 2017; Lau et al., 2013; Pinto et al., 2019; Virkus, 2013) demonstrating how IL research has been diversifying topics of interest and penetrating higher education worldwide. The results of one study (Onyancha, 2020) revealed that IL has evolved from being a library and/or librarianship-oriented concept to a multidisciplinary field and is no longer restricted to social sciences, but is spread across 27 disciplines, confirming a broad spectrum of activity. Another study (Horton Jr., 2016) referred to the importance of the circulation of knowledge in IL, not only through scientific publications but also through education and training, professional associations, large conferences, small meetings, workshops, seminars and webinars, national and local government laws, regulations and policies, best practices, and personal experiences.

At the same time, the discussion of terminology in IL has also been the subject of debate. In their study, Pinto et al. (2010) discussed a terminological, conceptual, and statistical analysis of the main subjects related to IL, as well as its evolution over the last 30 years. They illustrated how IL has been progressively incorporated into the library and academic fields. Gasque (2013)

delved into the conceptual theme, detailing the subjects of informational skill, informational competence, IL, and reflecting on the difficulties of stabilising the vocabulary. The topic is relatively new and, therefore, has prompted terminological discussions, especially concerning the translation of concepts from English into Portuguese.

Bruce (2004) developed the argument that three topics should be considered in an educational change context involving IL – policies, professional development and curriculum, and argued that for the success of an IL program there is a need to combine these three factors. In terms of policies, it is essential to ensure that there is a vision of IL as a strategic vector for academic development (Corrall, 2008; Kyrychok et al., 2021; Webber & Johnston, 2014). Regarding professional development, librarians must invest in their qualifications, particularly their teaching skills. As for the curriculum, an effort is needed to clarify how IL can contribute across the board to improve it, and that can be applied to different subject areas.

Based on this assumption, it is legitimate to consider that the guiding documents for teaching IL answer these premises, although other more comprehensive documents, in the political scope, may also be important (Dudziak, 2016). They provide librarians with the conditions to be policy agents, to develop professionally, as they instigate best practices, and promote the necessary curricular changes in the design of programs for teaching IL. Thus, they function as axes of professional discourse around IL and stabilisers of terminology and conceptual understanding.

Several authors have dedicated themselves to studying and proposing models that adapt to different realities, including Rockman (2004), who referred to successful training experiences in higher education, a South African example at a university in Pretoria (De Boer et al., 2012), or in Portugal (Andrade, 2016; Lopes, 2016).

Articles from several Brazilian authors (Alves & Alcará, 2014; Spudeit, 2016) stood out for their pertinence, dealing with IL models and their applications in an academic context, and which report experiences carried out in different universities and countries. Internationally, several models are important for the conceptualisation and definition of the IL terminology: the Big 6 Skills models (Eisenberg & Berkowitz, 1990, 1999), Marland's Nine Steps (Marland, 1981), the PLUS model (Herring et al., 2002), or Guided Inquiry (Kuhlthau et al., 2007).

For this paper, it is important to make a current observation of the evidence based on international documents considered as references for academic librarians who teach IL. While not all librarians feel comfortable in the role of a teacher (Wheeler & McKinney, 2015), the pedagogic role of academic libraries is recognised as an essential feature of the organisational mission and must move from emergent practice to best practice (Walter, 2006). This idea, subsequently defended by Belluzzo and Feres (2013), assumes that information competence is an important worldwide movement to promote knowledge and its application, providing opportunities for citizens to assert themselves and contributing to the development of society (Basili, 2021; Landøy et al., 2020; Thomas, 2018).

### **3. Methods**

#### **3.1. A content inventory of international documents**

It is evident that the librarians' updating of skills implies being aware of current trends for the sector, but also implies transforming them into practical tips and recommendations appropriate to each national context.

Thus, in the first stage, a document inventory of the main instruments that regulate and guide the systematic planning of teaching programs in IL is listed. We seek to obtain a comprehensive overview and a pedagogical trend of the IL evolution. As a selection criterion, we sought to perceive national and international acceptance and its potential adoption by the professional community, providing the actors with guidelines within their performance, particularly in the teaching of IL in higher education. Data collection begins in 2000, with the ACRL Standards which the authors consider as a revealing milestone of IL changes in higher education, and ends in 2020.

#### **3.2. National application**

The international inventory made it possible to move on to the second stage of our research which involved the authors of this paper working with the Portuguese Working Group for Academic Libraries (GT-BES) comprising Portuguese academic librarians. This group worked together to evaluate the national adoption of the international documents by Portuguese higher

education libraries and looked at how these documents presented guidelines for the relevant actors (mostly librarians) within their performance for the teaching of IL in higher education.

## **4. Results**

The results list the main documents, presented in chronological order, as well as the organisations, bodies, or producer associations, associating each of them with the countries of origin (Table 1). A more detailed analysis of each of the documents in question is then carried out, which includes the chosen terminology and the main concepts from each of the documents highlighted.

Throughout this analysis, it is possible to understand not a radical cut between each publication, but a gradual evolution, which often overlaps, repeats or deepens conceptual relationships associated with IL. This evolutionary vision allows us to understand that international documents use each other, citing each other (Faulkner & Ford-Baxter, 2021, Taşkın et al., 2013), in a growing process of improvement, using recognised terminology, disseminating, and consolidating the theoretical framework that is not fixed, but rather fluid and engaging. Thus, it is confirmed that in the scientific and professional community there is an asynchronous dialogue established through reference documents, but also through the articles that study them and the conferences, meetings, training, and other events that echo these recommendations.

Considering the international context, it is important that in Portugal the academic libraries also reflect their concrete reality so that they can prepare themselves and act in an adequate and meaningful way within their academic communities.

In recent years, the GT-BES has been asserting itself on several work fronts, which sought to align strategies, develop projects, and implement working tools, contributing to the affirmation of libraries and professionals. One of the initiatives was the creation and dissemination of the Portuguese Recommendations for Academic Libraries in 2016 (Sanches & Costa, 2017). At that time, the document was disseminated among BAD members, librarians, leaders of academic institutions, and the Ministry of Science and Higher Education. The discussion and drafting of the Portuguese Recommendations

Table 1: Information Literacy: reference documents for teaching models.

Org.	Document (year)	Document analysis, main concepts (highlighted in bold), and terminology
ALA/ACRL (USA)	<b>Information literacy competencies standards for higher education</b> (2000)	The document states that an individual trained with information skills must be able to determine the need for information and its extent, access information efficiently and effectively, critically evaluate the information and its sources, incorporate the selected information into your knowledge base, use the information effectively to fulfil a specific objective, understand the economic, legal and social implications around the use of the information and know-how to access it and use it ethically and legally. These course lines were drawn given the definition of five <b>standards</b> of competence that are explored, deepened, and developed in <b>performance indicators</b> that originate measurable <b>outcomes</b> . The main intention is expressed on the idea that the development of IL skills will make individuals more capable of dealing with information in the various spheres of action throughout life. Note that this document was replaced by the ACRL Framework (2016) and is no longer in practice. ( <a href="https://crln.acrl.org/index.php/crlnews/article/view/19242/22395">https://crln.acrl.org/index.php/crlnews/article/view/19242/22395</a> )
ALA (USA)	<b>Guidelines for instruction programs in Academic Libraries</b> (2003)	Set of tools built to better assist academic librarians in the preparation and development of effective instructional programmes. Guidelines were designed to guide specialists for their programmes, aimed at library users for the good use of information. The document highlights the need not only to design an effective and sustained training course but also to measure the fulfilment of the <b>learning objectives</b> outlined there. ( <a href="http://www.ala.org/acrl/standards/guidelinesinstruction">http://www.ala.org/acrl/standards/guidelinesinstruction</a> )
CAUL/ ANZIIL (Australia)	<b>Australian and New Zealand Information Literacy Framework: principles, standards and practice</b> (2004)	The document advocates the understanding of IL, detailing its application in practice, as a set of transversal competencies that contribute to strengthening the <b>attributes</b> that are expected of academic students. The vision is based on the idea of building a capacity for lifelong learning, in close alignment with the curriculum and learning objectives. ( <a href="https://www.utas.edu.au/data/assets/pdf_file/0003/79068/anz-info-lit-policy.pdf">https://www.utas.edu.au/data/assets/pdf_file/0003/79068/anz-info-lit-policy.pdf</a> )

Table 1 (continued)

Org.	Document (year)	Document analysis, main concepts (highlighted in bold), and terminology
IFLA	<b>Guidelines on Information Literacy for lifelong learning</b> (2006)	Information skills are a key factor in lifelong learning, are the first step towards achieving educational goals. The development of these competencies must occur throughout the life of citizens, especially during the school years, where librarians must assume the fundamental role of facilitating IL, through the creation, with the faculty, of integrated programmes in the curriculum, for <b>effective use of information</b> . The concepts of <b>computer literacy</b> and <b>media literacy</b> are introduced, and when aggregated, act as catalysts for the global process of learning IL. ( <a href="https://www.ifla.org/publications/guidelines-on-information-literacy-for-lifelong-learning">https://www.ifla.org/publications/guidelines-on-information-literacy-for-lifelong-learning</a> )
UNESCO	<b>Understanding information literacy: a primer</b> (2008)	The IL is designed, defined, understood, and applied to bring it about, not only with populations and trainers and teachers but essentially with government and decision-makers. IL becomes a new paradigm in the information and communication landscape. The document emphasises the universal way in which IL should be appropriated and used by all countries for <b>education, culture, and development</b> . ( <a href="https://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf">https://www.ifla.org/files/assets/information-literacy/publications/ifla-guidelines-en.pdf</a> )
SCONUL (UK, Ireland)	<b>The SCONUL Seven Pillars of Information Literacy: core model for higher education</b> (2011)	The document looks at IL stratified into <b>seven areas of competence</b> (or pillars) that can be developed in progression, from the most basic (the ability to recognise an information need) to the more complex (ability to synthesise and build on previous information, contributing to the creation of new knowledge). This model sought to give the perspective that undergraduate students will be positioned at the level of the basic pillars (basic skills), while graduate students and researchers already aspire to more advanced levels. The IL must be considered in the context of the <b>broad information landscape</b> in which an individual operates and their personal IL landscape. ( <a href="https://www.sconul.ac.uk/sites/default/files/documents/coremodel.pdf">https://www.sconul.ac.uk/sites/default/files/documents/coremodel.pdf</a> )



Table 1 (continued)

Org.	Document (year)	Document analysis, main concepts (highlighted in bold), and terminology
The Open University (UK)	<b>Digital and information literacy framework</b> (2012)	Coming from a University based on distance learning, the focus is <b>digital literacy</b> . Includes the ability to find and use information, but it also includes communication, collaboration, and teamwork, social awareness in the digital environment, understanding of electronic security, and the ability to create new information. The document emphasises that both digital and IL are supported by <b>critical thinking</b> and <b>evaluation</b> . Hence, it is constructed as a frame of reference that can be used to assess the levels of development of digital skills from the practices and use of devices and means for accessing information in digital media, confirming proficiency, that is, being digital. ( <a href="http://www.open.ac.uk/libraryservices/subsites/dilframework/">http://www.open.ac.uk/libraryservices/subsites/dilframework/</a> )
UNESCO	<b>Media and Information Literacy: policy and strategy guidelines</b> (2013)	The guidelines associate IL with <b>media literacy</b> : an ability to deal with information from the media in a critical and informed manner. Some concepts such as <b>digital literacy</b> , internet literacy, basic literacy, or library literacy, circulate as satellites attached to this larger concept. The document presents itself as a prospect, as it seeks to correspond to the current trends of convergence of radio, television, Internet, newspapers, books, archives, and physical and digital libraries on a single platform, understood, therefore, all of them, as means of accessing the information, regardless of channel. ( <a href="https://unesdoc.unesco.org/ark:/48223/pf0000225606">https://unesdoc.unesco.org/ark:/48223/pf0000225606</a> )
ACRL/ALA (USA)	<b>Framework for Information Literacy for higher education</b> (2016)	The document opens the way for information professionals, teachers, and other institutional partners to reformulate training course content and plans of study to be developed in higher education. Also, this tool seeks to develop and expand the debate on the teaching-learning process and reflect on the current process of creating and using information. The Framework defines IL as a standard of integrated competencies that contemplates the reflexive discovery of information, the understanding of how information is produced and valued, and the use of information in the ethical and legal creation of new knowledge.

Table 1 (continued)

Org.	Document (year)	Document analysis, main concepts (highlighted in bold), and terminology
		<p>It focuses on establishing coherent, but flexible, direction lines that develop around a set of <b>frames</b> (core concepts: Authority is constructed and contextual; Information creation as a process; Information has value; Research as inquiry; Scholarship as conversation; Searching as strategic exploration). Each of these core concepts includes a section of <b>knowledge practices</b> used to demonstrate how the mastery of the concept leads to its application in new situations and the creation of more knowledge; it also includes a set of <b>dispositions</b> that work the know-how in teaching-learning processes, encompassing the student's preferences and attitudes about the way they learn. The Framework highlights its terminology: the concepts of threshold and metaliteracy. The <b>threshold concepts</b> refer to the central ideas and processes that in any discipline define the discipline itself, but that are so ingrained that they are tacitly conceived or are not recognised by the practitioner. The concept of <b>metaliteracy</b> has numerous points of intersection with the threshold concept, and it is based on decades of theory and practice of IL while evidencing the necessary knowledge for a complete and interactive information environment. Note that this document replaced the ACRL Standards (2000). (<a href="http://www.ala.org/acrl/standards/ilframework">http://www.ala.org/acrl/standards/ilframework</a>)</p>

for Academic Libraries have been an act of social and professional intervention, which aims to put this issue on the political agenda and derives precisely from the professional needs expressed by stakeholders. Three years after the publication and large-scale dissemination of the guideline document from 2016, 'Recommendations for Higher Education Libraries', a study was carried out to understand the extent to which that document has been adopted by librarians and how practices and experiences have been introduced in Portuguese academic libraries (Sanches et al., 2020).

A non-exhaustive literature review shows that there are common concerns globally, which several organisations are trying to answer. These

organisations have been debating the future of academic libraries, which include university and polytechnic libraries and research centers. Examples are Denmark's Electronic Research Library in Denmark (Denmark's Electronic Research Library, 2019), the Council on Library and Information Resources in the United States (CLIR, 2008), the Research Information Network, and the Consortium of Research Libraries in the United Kingdom (Brown & Swan, 2007) and Ireland (Research Libraries UK, 2014), as well as several individuals and collective researchers (Eden, 2015; Sanches, 2018; Shorley & Jubb, 2013). In all these papers, the issues focus on the need for libraries to adapt to the change emerging in higher education, in technologies, and in ways of communicating and sharing information.

It is within this fluid context that librarians – in the partnerships they foster, in responding to the different needs of users, in the management of information systems, in engaging with new forms of publishing and growth of open access, and in everything involving the management and dissemination of scientific and scholarly knowledge – need to develop IL programmes that remain both relevant and critical.

#### **4.1. Development of the *Portuguese Recommendations for Academic Libraries (2020–2022)***

The analysis of the international documents allowed the GT-BES to identify fields of action, IL competencies, and training strategies – not forgetting the key concepts that were highlighted in each of the international guidelines.

The GT-BES concluded it was necessary to give a boost to the professionals in academic libraries to achieve the paradigm shift. They felt that it was necessary, in Portugal, for libraries and librarians to recognise their social functions and their fundamental role in the creation of a true Knowledge Society, through the assumption of their intervening and active role. Thus, the group developed the Portuguese Recommendations for Academic Libraries (hereafter 'the Recommendations'). The Recommendations were written to allow stakeholders to define priorities for the development of action plans in the short and medium-term and, on the other hand, converge on opportunities and lines of action for the mobilisation of professionals. We cannot forget the importance that academic libraries maintain in supporting teaching and research (Alexander et al., 2019; Gleason, 2018).

However, in recent years, there has been a major change in the relationship between users and libraries. Users now tend to be more autonomous because information has become more available in a virtual environment. Librarians' competencies are developing in the search, evaluation, and selection of information, and professional development and training are becoming increasingly important (Dempsey & Malpas, 2018; Mandal & Dasgupta, 2019; Yatim et al., 2019). How research and access to information occur and how information is produced and made available, have been substantially changed by technological developments, leading to exponentially greater availability of online information resources.

Libraries now offer more and diversified services, including user training, repositories, publishing projects and open-source software, precisely because of the new contextual configurations. At the same time, they continue to be the convergence point between science and knowledge, where bibliographic heritage must be preserved, in alignment with the best practices of cultural extension, as they assume a fundamental role in the construction of knowledge networks. Considering this involvement, the GT-BES, in the first stage, resumed the discussion about IL in alignment with four strategic dimensions: teaching and learning support; research support; professional and organisational development; and networks, culture, and heritage.

During the development of these dimensions of action, it was also considered that the various recipients of the final document were not only librarians but also the various stakeholders, including academic leaders, the Ministry of Science and Higher Education, and other related entities.

When a draft for discussion was stabilised, the GT-BES had the opportunity to present the Recommendations for public discussion in a webinar, held in May 2020, which was attended by about 200 participants. On that occasion, the working document was put up for public discussion, and suggested changes were integrated into the final text – the Recommendations.

The 12 final Recommendations focus on four dimensions of library action, all of which are interrelated and form important context for the specific development of IL programmes:

- Teaching and learning support, specifically in the promotion of IL skills and in fostering digital fluency and user empowerment.

- Research and scientific publication support, especially in the context of Open Science.
- Professional and organisational development places the librarian at the centre of the process and the institutions as synergy aggregators for continuous improvement actions.
- Design and provision of services and partnerships that facilitate and enhance the creation of networks for cultural expression, including the preservation and dissemination of documentary heritage.

Aggregated into each of the four strategic dimensions of action, the 12 Recommendations are presented in their consolidated version (Príncipe et al., 2020) (Table 2).

The implementation in all national academic institutions eventually turned the Recommendations into a common working policy. It allows library professionals to identify areas of expertise, but also to prioritise and individualise segments of performance in their working environment to support professional development.

## 5. Discussion

Considering the growing need to take on the construction of public policies in libraries, particularly of academic institutions, the presentation of the Recommendations for Academic Libraries was fundamental. The wide dissemination of normative documents and guidelines that guide IL programmes and the construction of good practices can and should be done through incentives to leadership that drive change and promote joint actions. However, it is also essential to anticipate what actions and consequences can be envisioned. We know that libraries are largely dedicated to supporting students in their learning journey, but also to teachers in their teaching and research functions. The Recommendations in the first strategic dimension present a common subject across the board, based on strategies for learning. In higher education, it is understood that learning is not feasible without IL, that is, without the development of transversal skills that allow students to apply their knowledge. It means that both students and the academic community should seek to mobilise themselves to make the student experience more meaningful and, in parallel, seek to bring together the best curricular content, pedagogical methods, technologies, and activities to provide the best possible learning experience (Julien et al., 2020; Sanches, 2016).

Table 2: *The Portuguese Recommendations for Academic Libraries (2020–2022).*

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<b>Teaching and Learning Support</b>	<b>Strengthening IL skills:</b> Strengthening IL skills aligned with users' needs by establishing training strategies for diversified audiences using varied formats and channels, offering quality training programs that include integrative approaches, the definition of learning objectives, and planning using international standard references.
	<b>Promote digital fluency and the ethical use of information:</b> Develop intervention plans that promote digital fluency and skill in the access and use of technological means in learning and research, stressing the importance of the ethical use of information and the right to privacy and the relevance of critical interpretation skills in combating fake news, supporting safe and responsible mobility in the digital universe.
	<b>Enable spaces for learning, experimentation, and knowledge creation:</b> Dynamise and redesign the physical and digital spaces of academic libraries through FabLabs, maker spaces, mobile learning, or others, enabling innovation, experimentation, discovery, and creation of knowledge, and adapting initiatives and resources to the promotion of active, participatory, and collaborative learning.
<b>Research Support</b>	<b>Training for the Open Science practice:</b> Strengthen libraries as facilitators and implementers of Open Science policies, offering training activities, designing services, and supporting the use of tools for the openness of research results and methods, within the framework of FAIR principles for data, assuming a role that promotes research integrity, scientific social responsibility, and citizen science initiatives.
	<b>Enabling publishing initiatives and scientific and scholarly publishing:</b> To support institutional publishing projects for the publication of journals and books, boosting the library's role as publisher and promoter of open access, quality standards, and standardised practices, contributing to the robustness of scientific communication infrastructures developed by the community and enabling innovative strategies and new publishing models.
	<b>Consolidate strategic partnerships in research support:</b> To affirm the action of the libraries as partners in the research produced in the institution, through strategies aligned with the co-creation of value throughout the different stages of the research processes, namely in the areas of selection of publications, curation of research data, peer review, authorship identification and management of researcher profiles, metrics, and visibility, among others.

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Table 2 (continued)

<b>Professional and Organisational Development</b>	<p><b>Foster the innovative potential and value of academic libraries:</b> To foster innovation and continuous improvement, enhancing the role of academic libraries through the systematic adoption of performance indicators, the active promotion of change, and the incorporation of project management and collaborative work methodologies, in a commitment to the integration of librarians in multidisciplinary and research teams.</p> <p><b>Invest in the training of professionals:</b> Increase strategies for the development of librarians' skills to meet the challenges of the digital age, encouraging them to engage in self-learning and research, as well as in training programs to build specialised knowledge that will be of value to the community.</p> <p><b>To assume the potential of technological pioneering:</b> To assume the role of academic libraries as agents of change and technological pioneering, leaders, partners, and implementers of emerging trends in higher education in the field of information management and teaching-learning, reinforcing the influential position of libraries and their professionals in the institutional framework.</p>
<b>Networks, Culture, and Heritage</b>	<p><b>Ensure the preservation and dissemination of cultural and scientific heritage:</b> To affirm the academic libraries as facilitating platforms that ensure the curation, preservation, and dissemination of cultural and scientific heritage and heritage built on printed and digital information (publications, websites, research data, among others), ensuring the quality of metadata and interoperability standards.</p> <p><b>Stimulate the integrated cultural and scientific offer:</b> To develop a consistent cultural and scientific program, through the offer of activities that contribute to the integral formation of students, fostering citizenship, cultural fruition, and active participation in society, extendable to the entire academic community and surrounding community.</p> <p><b>Actively participate in institutional cooperation networks and social partnerships:</b> To lead the creation and dynamisation of cooperation networks and strengthen social partnerships (museums, schools, cultural centres, associations, archives, patrons, and others), namely in intra-institutional, local, and national or international programs and projects, of transversal and inclusive nature, for the promotion and dissemination of knowledge and to bring the academic libraries closer to society.</p>

The importance of investing in the context-specific training programmes, targeted to specific groups of users, is emphasised, using international guidelines that show how these concepts can be applied. Based on these references, namely the *Framework for Information Literacy for Higher Education* (Association

of College & Research Libraries, 2016), three keywords are highlighted that can be worked on: concepts, dispositions to act, and attitudes. These expressions will be interconnected in the three recommendations of the dimension *Teaching and Learning Support*. We work with a target audience, academic students, who must first of all master disciplinary subjects and are dedicated to studying concepts without which they cannot operationalise knowledge. Then, dispositions for action are connected to the way students themselves see their competencies in a field of knowledge and develop them. Finally, attitudes, for example, curiosity, resilience, learning by doing, are strategies to empower our audience for IL.

As academic librarians, we should prioritise the establishment of training for our users (mainly students), developing abilities in search and to use the information in an appropriate and meaningful way in their academic career. It also becomes evident, in a digital context, that there is a need to develop digital fluency and practice ethical use of information, given that digital fluency is also based on a characteristic linked to information, its interpretation, and its good use. If we are not able to use a browser or conduct an effective Internet search, our digital fluency may be compromised. Digital fluency also implies knowing how to surf the Internet safely, knowing what privacy is, knowing how to respect the authorship and all the implications that these issues involve. In times that are becoming increasingly digital, the development of digital fluency is critical – whether we are participating in online meetings, mastering email, exhibiting online ethical practice and appropriate etiquette or knowing how to critically interpret information and distinguish fake news. These are conditions that also enable safe and confident mobility in these media. As for the dynamisation of spaces for learning, experimentation, and knowledge creation, the focus is on active learning, and how we can enhance it, that is, how users discover, use and experiment with information and resources to create new knowledge. They have to know how to access information, how to use it in a competent, appropriate and meaningful way to support the creation of reliable new knowledge.

Examples for training can be based on the documents issued by the Joint Task Force on Competencies for Librarians in Support of E-Research and Academic Communication<sup>1</sup>, which brought 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) (Calarco et al.,



2016; Schmidt & Shearer, 2016a, 2016b). Here we can acknowledge the competency profiles that professionals must develop: from source management to supporting new functions, specifically in the areas of academic communication and research in the digital age. Explicit in their general objectives, these profiles will enable library managers to identify skills gaps in their institution. They can form the basis of job descriptions, enable professionals to carry out self-assessments, and act as a foundation for the development of training programmes for librarians and library professionals.

In summary, this reinforcement of IL skills, in multiple formats, will also promote digital fluency, allowing us to frame our offer of services, spaces, and resources, channelling it towards effective knowledge creation.

## 6. 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 investment in knowledge and learning for their library staff. This investment results in greater expertise and professional competence in the service, better answers to the reference questions, the more effective management of collections, spaces, human resources and information, improved teaching skills, and the ability to support institutional research in several aspects. This means knowing in-depth information resources, terminologies, methods, and professional practices, to respond adequately to each request, in addition to a permanent update of transversal skills for all documentation and information professionals. It also demonstrates a visible adaptation to the demands of the Open Science movement and an understanding of its implications. The consequences of improving librarians' skills, which imply keeping abreast of current trends and latest recommendations for the sector, include tangible benefits for reducing costs, optimising resources for the management of libraries, improved management of knowledge, collections, and information, increasing students' academic success, improving teaching support and enhancing the conditions for the production and projection of research. These results should be motivating factors for academic 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 to contribute to the visibility and influence of librarians, but also accountability and commitment to the profession and its impact on higher education.

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## **References**

- Alexander, B., Ashford-Rowe, K., Barajas-Murph, N., Dobbin, G., Knott, J., McCormack, M., Pomerantz, J., Seilhamer, R., & Weber, N. (2019). *EDUCAUSE Horizon report: 2019 higher education edition*. EDU19.
- Alves, F. M., & Alcará, A. R. (2014). Modelos e experiências de competência em informação em contexto universitário [Models and experiences of information literacy in a university context]. *Encontros Bibli*, 19(41), 83–104. <https://doi.org/10.5007/1518-2924.2014v19n41p83>.
- Andrade, I. (2016). O curso de literacia da informação da NOVA Escola Doutoral: The road to information Literacy [The information literacy course at NOVA Escola Doutoral: The road to information Literacy]. In C. Lopes, T. Sanches, I. Andrade, M. L. Antunes, & J. Alonso-Arévalo (Eds.), *Literacia da informação em contexto universitário* (pp. 59–85). Edições ISPA.
- Association of College & Research Libraries. (2016). *Framework for information literacy for higher education*. American Library Association. <https://www.ala.org/acrl/standards/ilframework>.
- Basili, C. (2021). Information literacy policies for a global information society. In P. A. Robinson, K. V. Williams & M. Stojanović (Eds.), *Global citizenship for adult education* (pp. 285–295). Routledge.
- Belluzzo, R. C., & Feres, G. G. (2013). *Competência em informação: de reflexões às lições aprendidas [Information literacy: from reflections to lessons learned]*. FEBAB.
- Berg, C. (2020). Updating learning outcomes and engaging library faculty with the ACRL framework. *The Journal of the Academic Librarianship*, 46(2), 102040. <https://doi.org/10.1016/j.acalib.2019.05.008>.

- Brown, S., & Swan, A. (2007). *Researchers' use of academic libraries and their services*. Research Information Network, Consortium of Research Libraries.
- Bruce, C. (2004). Information literacy as a catalyst for educational change: A background paper. In P. A. Danaher (Ed.), *Proceedings Lifelong Learning: Whose responsibility and what is your contribution? – The 3rd International Lifelong Learning Conference* (pp. 8–19), Yeppoon, Queensland. [http://eprints.qut.edu.au/4977/1/4977\\_1.pdf](http://eprints.qut.edu.au/4977/1/4977_1.pdf).
- Calarco, P., Shearer, K., Schmidt, B., & Tate, D. (2016). *Librarians' competencies profile for scholarly communication and open access*. Joint Task Force on Librarian's Competencies in Support of E-research and Scholarly Communication. [https://www.coar-repositories.org/files/Competencies-for-ScholComm-and-OA\\_June-2016.pdf](https://www.coar-repositories.org/files/Competencies-for-ScholComm-and-OA_June-2016.pdf).
- Corrall, S. (2008). Information literacy strategy development in higher education: An exploratory study. *International Journal of Information Management*, 28(1), 26–37. <https://doi.org/10.1016/j.ijinfomgt.2007.07.002>.
- Council on Library, & Information Resources. (2008). *No brief candle: Reconceiving research libraries for the 21st century*. Council on Library & Information Resources.
- De Boer, A. L., Du Toit, P. H., Bothma, T. J., & Scheepers, M. D. (2012). Constructing a comprehensive learning style flexibility model for the innovation of an information literacy module. *Libri*, 62, 185–196. <https://doi.org/10.1515/libri-2012-0014>.
- Dempsey, L., & Malpas, C. (2018). Academic library futures in a diversified university system. In N. Gleason (Ed.), *Higher education in the era of the fourth industrial revolution* (pp. 65–89). Palgrave Macmillan. [https://doi.org/10.1007/978-981-13-0194-0\\_4](https://doi.org/10.1007/978-981-13-0194-0_4).
- Denmark's Electronic Research Library. (2009). *The future of research and the research library*. [https://www.deff.dk/fileadmin/user\\_upload/DEFF/publikationer/Oevrige/The\\_Future\\_of\\_Research\\_and\\_the\\_Research\\_Library.pdf](https://www.deff.dk/fileadmin/user_upload/DEFF/publikationer/Oevrige/The_Future_of_Research_and_the_Research_Library.pdf).
- Dudziak, E. A. (2016). Políticas de competência em informação: Leitura sobre os primórdios e a visão dos pioneiros da Information Literacy [Information literacy policies: Reading about the beginnings and the vision of information literacy pioneers]. In F. M. Alves, E. C. Corrêa, & E. R. Lucas (Eds.), *Competência em informação: Políticas públicas, teoria e prática* (pp. 19–46). EDUFBA.
- Eden, B. L. (2015). *Creating research infrastructures in the 21st-century academic library: Conceiving, funding, and building new facilities and staff*. Rowman & Littlefield.
- Eisenberg, M. B., & Berkowitz, R. E. (1990). *Information problem solving: The Big Six approach to library and information skills instruction*. Ablex.
- Eisenberg, M. B., & Berkowitz, R. E. (1999). *Teaching information & technology skills: The Big6 in elementary schools*. Linworth.
- Faulkner, K., & Ford-Baxter, T. (2021). An analysis of references to information literacy in national disciplinary standards. *Portal: Libraries and the Academy*, 21(4), 797–834. <https://doi.org/10.1353/pla.2021.0042>.

- Gasque, K. C. (2013). Competência em informação: Conceitos, características e desafios [Information literacy: Concepts, characteristics and challenges]. *AtoZ*, 2, 5–9. <https://doi.org/10.5380/atoz.v2i1.41315>.
- Gleason, N. W. (2018). *Higher education in the era of the fourth industrial revolution*. Springer Nature.
- Herring, J. E., Tarter, A.-M., & Naylor, S. (2002). An evaluation of the use of the PLUS model to develop pupils' information skills in a secondary school. *School Libraries Worldwide*, 8(1), 1–24.
- Horton Jr., F. W. (2016). Towards strengthening the global information literacy infrastructure. In F. M. Alves, E. C. Corrêa, & E. R. Lucas (Eds.), *Competência em informação: Políticas públicas, teoria e prática* (pp. 19–46). EDUFBA.
- Julien, H., Gross, M., & Latham, D. (Eds.). (2020). *The information literacy framework: Case studies of successful implementation*. Rowman & Littlefield Publishers.
- Kolle, S. R. (2017). Global research on information literacy: A bibliometric analysis from 2005 to 2014. *The Electronic Library*, 35(2), 283–298. <https://doi.org/10.1108/EL-08-2015-0160>.
- Kuhlthau, C. C., Maniotes, L. K., & Caspari, A. K. (2007). *Guided inquiry: Learning in the 21st century*. Libraries Unlimited.
- Kyrychok, I., Pavlenko, T., Kravchenko, S., & Kuts, O. (2021). The role of the academic library in information literacy programs for graduate students. *Regional Innovations*, 2, 7–10.
- Landøy, A., Popa, D., & Repanovici, A. (2020). Basic concepts in information literacy. In A. Landøy, D. Popa & A. Repanovici (Eds.), *Collaboration in designing a pedagogical approach in information literacy* (pp. 23–38). Springer.
- Lau, J., Gárate, A., & Osuna, C. (2013). Walking from concepts to facts: A holistic information literacy approach experience at the university level. In S. Kurbanoğlu, E. Grassian, D. Mizrachi, R. Catts & S. Špiranec (Eds.), *Worldwide Commonalities and Challenges in Information Literacy Research and Practice* (pp. 302–308). Springer. [https://doi.org/10.1007/978-3-319-03919-0\\_39](https://doi.org/10.1007/978-3-319-03919-0_39).
- Lopes, C. (2016). As competências da literacia da informação integradas nos currículos académicos [Information literacy skills integrated into academic curricula]. In C. Lopes, T. Sanches, I. Andrade, M. L. Antunes, & J. Alonso-Arévalo (Eds.), *Literacia da informação em contexto universitário* (pp. 87–102). Edições ISPA.
- Mandal, S., & Dasgupta, S. (2019). Changing role of academic librarians in 21st century: A literature review. *Pearl: A Journal of Library and Information Science*, 13(1), 35–44. <https://doi.org/10.5958/0975-6922.2019.00006.8>.
- Marland, M. (1981). *Information skills in the secondary curriculum*. Methuen Educational.

- Onyancha, O. B. (2020). Knowledge visualization and mapping of information literacy, 1975-2018. *IFLA Journal*, 46(2), 107–123. <https://doi.org/10.1177/0340035220906536>.
- Pinto, M., Cordón, J. A., & Gómez Díaz, R. (2010). Thirty years of information literacy (1977-2007): A terminological, conceptual, and statistical analysis. *Journal of Librarianship and Information Science*, 42(1), 3–19. <https://doi.org/10.1177/0961000609345091>.
- Pinto, M., Fernández-Pascual, R., Caballero-Mariscal, D., Sales, D., Guerrero, D., & Uribe, A. (2019). Scientific production on mobile information literacy in higher education: A bibliometric analysis (2006-2017). *Scientometrics*, 120, 57–85. <https://doi.org/10.1007/s11192-019-03115-x>.
- Príncipe, P., Silva, D., Sanches, T., Lopes, S., Pereira, A. A., Lopes, C., Pereira, A. A., Lopes, C., Antunes, M. L., Carvalho, M., Vargues, M. M., Saraiva, P. S., Aurindo, M. J., Martins, T. A., Amante, M. J., Cunha, T., Guerreiro, D., de Carvalho, M., Pireza, I., ... Correia, M. A. (2020). *Recomendações para as bibliotecas do ensino superior de Portugal 2020-2022* (Version 1)[Report]. Zenodo. <https://doi.org/10.5281/zenodo.3841363>.
- Research Libraries UK. (2014). *Powering scholarship: RLUK research libraries UK strategy 2014-2017*. RLUK, Research Libraries UK.
- Rockman, I. F. (2004). *Integrating information literacy into the higher education curriculum: Practical models for transformation*. Jossey-Bass.
- Sanches, T. (2016). Modelos de literacia da informação e desenho de um programa para bibliotecas do ensino superior: uma proposta. In C. Lopes, T. Sanches, I. Andrade, M. L. Antunes & J. Alonso-Arévalo (Eds.), *Literacia da informação em contexto universitário* (pp. 3–26). Edições ISPA.
- Sanches, T. (2018). Required skills for teachers: Information literacy at the top. In S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts & S. Špiranec (Eds.), *Worldwide Commonalities and Challenges in Information Literacy Research and Practice* (pp. 634–644). Springer. [https://doi.org/10.1007/978-3-319-74334-9\\_65](https://doi.org/10.1007/978-3-319-74334-9_65).
- Sanches, T., & Costa, T. (2017). Guidelines for higher education libraries in Portugal. *LIBER Quarterly*, 27(1), 212–231. <https://doi.org/10.18352/lq.10219>.
- Sanches, T., Costa, M. T., & Aurindo, M. J. (2020). Adoption of the guidelines for higher education libraries in Portugal: Contributions to assessment. *LIBER Quarterly*, 30(1), 1–22. <https://doi.org/10.18352/lq.10324>.
- Schmidt, B., & Shearer, K. (2016a). *Librarians' competencies profile for research data management*. Joint Task Force on Librarian's Competencies in Support of E-research and Scholarly Communication. [https://www.coar-repositories.org/files/Competencies-for-RDM\\_June-2016.pdf](https://www.coar-repositories.org/files/Competencies-for-RDM_June-2016.pdf).
- Schmidt, B., Calarco, P. V., Kutchma, I., & Shearer, K. (2016b). Time to adopt: Librarians' new skills and competency profiles. In F. Loizides & B. Schmidt (Eds.), *Positioning and Power in Academic Publishing: Players, Agents and Agendas*. IOS Press. <https://doi.org/10.3233/978-1-61499-649-1-1>.

Shorley, D., & Jubb, M. (2013). *The future of scholarly communication*. Facet Publishing.

Spudeit, D. (2016). Programas para desenvolvimento de competências informacionais: Implementação, metodologias e avaliação [Programs for the development of informational skills: Implementation, methodologies and evaluation]. In F. M. Alves, E. C. Corrêa, & E. R. Lucas (Eds.), *Competência em informação: Políticas públicas, teoria e prática* (pp. 235–277). EDUFBA.

Taşkın, Z., Doğan, G., & Şencan, İ. (2013, October). Analyzing the intellectual structure of world information literacy literature through citations and co-citations. In S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts & S. Špiranec (Eds.), *Worldwide Commonalities and Challenges in Information Literacy Research and Practice* (pp. 54–60). Springer. [https://doi.org/10.1007/978-3-319-03919-0\\_6](https://doi.org/10.1007/978-3-319-03919-0_6).

Thomas, S. N. (2018). Promoting digital citizenship in first-year students: Framing information literacy as a tool to help peers. *College & Undergraduate Libraries*, 25(1), 52–64. <https://doi.org/10.1080/10691316.2017.1329675>.

Virkus, S. (2013). Information literacy in Europe: Ten years later. In S. Kurbanoglu, E. Grassian, D. Mizrachi, R. Catts & S. Špiranec (Eds.), *Worldwide Commonalities and Challenges in Information Literacy Research and Practice* (pp. 250–257). Springer. [https://doi.org/10.1007/978-3-319-03919-0\\_32](https://doi.org/10.1007/978-3-319-03919-0_32).

Walter, S. (2006). Instructional improvement: Building capacity for the professional development of librarians as teachers. *Reference & User Services Quarterly*, 45(3), 213–218.

Webber, S., & Johnston, B. (2014). Transforming information literacy for higher education in the 21st century: A lifelong learning approach. In M. Hepworth, & G. Walton (Eds.), *Developing people's information capabilities: Fostering information literacy in educational, workplace and community contexts* (pp. 15–30). Emerald Group Publishing. [https://doi.org/10.1108/S1876-0562\(2013\)0000008006](https://doi.org/10.1108/S1876-0562(2013)0000008006).

Wheeler, E., & McKinney, P. (2015). Are librarians teachers? Investigating academic librarians' perceptions of their own teaching roles. *Journal of Information Literacy*, 9(2), 111–128. <https://doi.org/10.11645/9.2.1985>.

Yatim, N. M., Nasharudin, N., Samsudin, N. F., Said, S. M., & Tarsik, N. F. (2019). Recognizing the personal competencies of future information professionals. *Acta Informatica Malaysia*, 3(1), 21–23. <https://doi.org/10.26480/aim.01.2019.21.23>.

## Note

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<sup>1</sup> Additional information on the Task Force here: <https://www.cni.org/topics/assessment/joint-task-force-on-librarians-competencies-in-support-of-e-research-and-scholarly-communication>.