Monograph "Information and Digital Competencies in Higher Education"

University Libraries and the Development of Lecturers' and Students' Information Competencies

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Abstract

This article explains why university libraries assume, as one of their priorities, the development of lecturers' and students' information competencies. It also explains some of the options for achieving that goal.

Keywords

information competencies, university libraries, university lecturers, university students, library services, information literacy

Las bibliotecas universitarias y el desarrollo de las competencias informacionales en los profesores y los estudiantes

Resumen

En este trabajo se exponen las razones por las cuales las bibliotecas universitarias asumen entre sus prioridades el desarrollo de competencias informacionales de docentes y estudiantes. Además se explican algunas de las posibilidades para conseguirlo.

Palabras clave

competencias informacionales, bibliotecas universitarias, profesores universitarios, estudiantes universitarios, servicios bibliotecarios, alfabetización informacional

Introduction

Today, Spanish university libraries believe that their function goes beyond the mere provision of instrumental support for teaching and learning activities. Theirs is an intrinsically educational function, in which they get wholly involved. Indeed, they have made it one of their priorities (strategic plan, REBIUN, 2007). Libraries are a resource for documentary research, and they should teach people how to do it properly. It is not simply about how to find information, but also about how to evaluate, select, rework, use and communicate it. In other words, it is a matter of contributing to information competency training, which includes procedural, conceptual and ethical aspects alike. It is fundamental to active, constructive and situated learning. Libraries are making a considerable effort to achieve this goal: they have digital repositories for both research and learning, they have implemented a resources centre model for learning and research, they carry out more and more general and specialised user training, they publish tutorials and guidelines for information management, they organise thematic digital resources, they provide OpenCourseWare, they promote reference services, they use social networks, they provide support for lecturers to prepare new teaching materials and so on. This, therefore, is the broad, evolving process covered in this article.

1. Why Do Librarians Want to Assume Educational Duties for Information Competencies?

This new role may, in the first instance, seem rather strange to the university community, because one of the characteristic features of our higher education system is the considerable compartmentalisation of know-how and functions. The fact that librarians want to "teach" as "learning mediators" represents:

- For some lecturers, the potential for their duties to be usurped, because the more formal, regulated teaching function corresponds to them: establishing what a student ought to learn, what content should be covered, how to convey it and how to evaluate attainment. Many lecturers still consider libraries to be nothing more than a container of organised resources at the service of their duties and, through their mediation, the tasks assigned to their students.

- For students, something unexpected, because libraries have traditionally been spaces for collective study, with a number of infrastructure facilities for developing habits like working with others, getting hold of recommended materials and so on. However, they have never seen librarians as teachers in the strictest of senses. At the most, they may have considered librarians as assistants or advisors to help them find information when they had special or specific requests.

- For librarians themselves, an effort to adapt to the changes, because their professional development and self-concept has transformed them into organisers, processors, technicians, intermediaries and so on.

Consequently, becoming teachers is, for librarians, a shift of profession and model, and one that is both significant and difficult, like any other. It is a matter of becoming involved in duties carried out by others – albeit not explicitly requested – in a competitive context, since everything has a financial and organisational impact (What recognition is there? What evaluative legitimacy is there? What other departments and services are they working for or against?).

Thus, we come back to the why and the wherefore. There are conceptual and practical reasons. The former are connected with the evolution of a library's mission in line with changes taking place in the university context in which it is located. The latter are connected with the need for a library to justify its existence, to demonstrate that it is worthy of the investment made in it, and to gain greater protagonism than other university services. It is a matter of engaging in a commitment to universities and of becoming relevant.

The world of education and the world of information have changed tremendously over the last 40 years. Means of accessing and consuming information have evolved to such an extent that libraries are forced to restructure their function so as not to become obsolete. Accessible information networks and the spread of hypertext reading, with a host of new ways to interrelate and incorporate knowledge; the ease of communicating and publishing information, opinions and knowledge of differing value without any filters or intermediaries; the demands of the productive system and the labour market with respect to graduates' competencies; the excessive and fragmented nature of information; the availability of virtual campuses where lecturers and students share learning materials and so on. Together, what impact does all of this have on libraries?

- Changes to intermediation duties. Services of a merely intermediary nature are brought into question, given that people can and want to get direct, immediate access to knowledge. A user may not need a library to obtain information. Universities' virtual campuses on the one hand, and the collections of resources that lecturers make directly available to students via subject websites on the other, mean that students do not go to libraries to look for those materials. This leads to a decrease in traditional lending. Likewise, the existence of a large quantity of free information sources and documents in open access archives on the Internet also means that students and lecturers make less physical use of libraries. Moreover, they do not seem to take library web portals as a basic point of reference for obtaining the information they need. On the contrary, they consider, albeit mistakenly, that they have everything on the Internet and in search engines, and that they do not need library web portals.

- This compels libraries to offer innovative, added-value services:

  – The provision of new working and learning spaces: despite the intangible, virtual nature of information, people want places where they can interact, talk and exchange ideas with their lecturers, and where they can get support and technical, methodological and educational advice for the creation of knowledge. Libraries provide all of this through Learning and Research Resources Centres (CRAI).

  – The edition and publication of an institution's digital content, with open access. Libraries promote digitalisation and publication of digital content via digital repositories. These repositories broaden the distribution of theses, journals, conference proceedings and other documents published by members of their university communities through initiatives that foster self-archiving, open access and the use of protocols for optimum document gathering. This promotes an ethic of disseminating scientific knowledge created with public funds.

  – The selection and filtering of high-quality content: this role is becoming more and more crucial to users; if a library manages to do this, it becomes an accredited source of relevant, accredited content.

  – Cultural facilitation. Traditional cultural activities run by libraries are on the up once again: reading clubs; creative writing workshops; painting, photographic, scientific dissemination and social awareness exhibitions; book, music and film collections; literary or other artform competitions and so on are ways of attracting people to libraries and of making libraries a useful social space. This enriches the function of spaces and services, over and above their curricular learning use.

  – Participation in the attainment of basic and generic competencies. The above-mentioned services benefit the students' integral education, their personal maturity, the development of creative facets, critical thought and citizenship habits and values, cultural practices, and social and disciplinary interrelations.

  – Teaching a competency that is specifically linked to library services, "information management and use", the mastery of which is considered to be an essential attribute for any university graduate in the framework of educational models arising from the European Higher Education Area (EHEA).

The conclusion is that libraries are interested in information competencies because today, rather than physical and digital collections in real or virtual spaces, libraries are places where a group of professionals aspire to ensure that students learn, enabling them to become competent in digital and information skills while they are at university and throughout their lives.

2. But How Do Students and Lecturers Access and Use Information?

An object of study and a question that interests librarians a great deal is the information behaviour of its users. If they understand it, they can identify users' expectations and needs and habits. This will allow librarians to adapt to users in order to guide and improve their practices through information literacy services. These services have been around for over 30 years in Spanish documentary institutions (Pinto, Cordón & Gómez, 2010). Although there are many traits particular to the behaviour of information searching and use (depending on the knowledge area, course, degree or activity of study or research), from works such as those cited in the bibliography at the end of this article, it is possible to obtain a general picture of the identifying traits most common to university lecturers and students in connection with our topic.

Students

University students are familiar with digital reading based on hypertext browsing; in addition to reading, they create, publish and share content by taking part in networks; they like immediate access, anytime, anywhere, through simple interfaces without intermediaries, through search engines rather than library portals; they are able to multitask, though they skim the information, spending more time on browsing than on reading the information displayed; they usually download and save information that they do not have time to read later; their speed of communicating and viewing information is greater than their in-depth critical capacity. Specifically, the CIBER report (British Library & JISC, 2008), OCLC (2006) and University of Seville (2009) identified a number of shortcomings among new students:

- A poor understanding of information needs and, therefore, difficulties in developing effective search strategies. A lack of reflection on the problem to be solved and what its application is going to be leads to impulsiveness in superficial searches using natural language rather than keywords, with a loss of relevant information.
- A lack of evaluation of the suitability, accuracy, authority, authenticity and intentionality of the information obtained. When faced with a long list of search results, young people have trouble evaluating the relevance of the materials presented and often print pages after a superficial glance.
- Mismatch between prior knowledge and the diversity of sources.
- Little reflection on the means of communicating results in accordance with the intention or the context, and a lack of awareness of the ethical aspects involved in information access and use.
- Search engines are the starting point for almost all information searches, not library portals, and most students are happy with their general experiences of using them, because they are better suited to their lifestyles than physical or online libraries.
- Books are the main image associated with libraries, despite the massive investment libraries have made in digital resources. Indeed, most students are unaware of the digital resources that libraries have.

When questioned, librarians stated that undergraduate students do not know how to search in library catalogues or holdings; they do not master the potential of advanced search systems; they do not know how to interpret the reference of an article or journal, perform database searches or evaluate the quality of websites. They stick to their lecturers' electronic dossiers; these play a determining role as bridges or links. Reworking of information is poor, writing processes for different contexts and types of work are not mastered, there is too much copying of information, no thought is given to the organisation of information and there is a lack of awareness of the ethical issues connected with copying and citation.

All of these comments lead to the conclusion that being a digital native is no guarantee of competence, and that work needs to be done with them to attain it. It may be the case that more and more students are arriving at university with fewer information skills due to the impulsiveness, fragmentation and superficiality of information consumption and use. It is very important to raise awareness of the importance of this competency. Librarians also need to be made aware of the need to get closer to these users in ways that allow them to connect.

Lecturers

Even though it can be assumed that lecturers are information competent, given the high degree of specialisation they have in their teaching or research fields, a few clarifications do need to be made. Lecturers also suffer from information overload, either generally or in their specific fields. They also find it hard to refresh their digital skills when faced with new search systems, new sources of information, new information management software, and new means of communicating knowledge and of taking part in social networks. Information competency is evolving all the time; tools sometimes change the form, pace and moment of academic writing; they imply a revision of values connected with the channels of knowledge publication and dissemination.

Several studies on lecturers' use of information have drawn certain conclusions that are of great concern to libraries. Libraries should act to stem these issues and turn them into opportunities. Even though lecturers' behaviour is different from students' for certain knowledge areas, reports like *Ithaka* (Housewright & Schonfeld, 2008) show that lecturers also like to find information directly through Google Scholar and other online sources rather than library portals. This implies that a library is somewhat invisible, despite the fact that it is usually the provider of access to many resources that are found through those channels. Lecturers believe that they depend less often on libraries for their teaching and research as the use of digital

resources increases; they value a library's role as a buying agent over and above other functions that librarians prefer, such as being the point of access to information resources.

These are just a few examples, but we believe that lecturers may be using information poorly and possibly need to refresh their competencies in the light of new products or the potential of the world of information. It would be rather inconsistent for them not to embrace the lifelong learning and literacy models that they preach to others. Throughout their academic lives, lecturers combine teaching and research activities with management activities that may prevent them from being up to date at all times. That is the reason why they need to refresh their information skills. They need to do this for themselves so that they can encourage their students to do the same.

3. What Prevents Libraries from Having a Greater Impact on Information Competency Acquisition?

Given that information is so vast and so complex, that it is accessed and distributed through so many channels, and that it is hard to master and to keep up with; and given that lifelong learning is a requirement that implies being able to draw on meaningful information throughout one's life, there are two questions that need to be asked. First, what obstacles have existed – or still exist – that prevent libraries from cooperating more with students? And second, what can be done to get lecturers to consider this a priority, so that a joint effort can be made to raise the profile of libraries?

The first, as we have already mentioned, refers to the risk of libraries being somewhat invisible, which may affect the expectations that people have of them. In this respect, libraries are called upon to take promotional and marketing actions: they must get closer to users, have a greater presence in their learning spaces, adapt to the different teaching and research needs and habits of lecturers in each discipline, get involved in innovative educational experiences, take part in social networks and means of informal learning of the type that new users like. Specifically, there is still a certain lack of awareness of the information literacy concept among lecturers, students and some librarians even. In comparison with the simplicity of search engines, users feel that library tools and technologies are rigid and hard to use, and this discourages them from using them. We do of course believe that any divergence between users' and librarians' technologies, desires and practices should be avoided. A mutual coming together needs to be achieved in order to facilitate new working processes, channels and better use of information.

Another difficulty has been the slow pace of change in teaching culture, which has held back the implementation of teaching methods that foster a broad, reflexive, critical and intentional use of libraries' scientific information, collections and digital resources. Ten years on from the Bologna Declaration, teaching culture is beginning to change, but there have been a number of counterproductive elements hindering that change, such as very little recognition of teaching with respect to research, the lack of activity planning for teaching-learning through problem-solving and library use, the minimal value placed on educational training in the teaching sector and the reproduction of practiced or received methods. In general, the various disciplines have been viewed as a closed set of pieces of knowledge that needed to be conveyed or transferred to students in order to incorporate them into the paradigm in force via a synthetic representation contained in a manual or basic selected texts. In fact, libraries continue to fill up around exam time with students who are prepared to memorise content in shifts, 24 hours a days, 7 days a week. Their study materials are on a virtual campus instead of in photocopiers, the basic texts for the exam are in electronic dossiers instead of in a library, a great deal of information is on the Internet and lecturers project their presentations or web pages in class to give examples of what they are trying to get across in their lectures. To a large extent, however, students still listen so that they can regurgitate pieces of knowledge in a conventional exam. This is why an insistence on supporting the change in teaching culture is still necessary.

With regard to carrying out training activities in libraries, which is very common in all universities (REBIUN, 2008b, c), there are a number of aspects that need to be improved to ensure that they become more successful (Somoza & Abadal, 2007; Roca, González & Mendoza, 2006):

- Educational training for librarians, because training tasks have usually been carried out by specialists in specific scientific areas. Librarians have not been trained to teach or to design instructional activities. It has not been part of the degree in library science and documentation and, therefore, has not been systematised in the university degree curriculum for librarians, though it has gradually been incorporated into professional refresher training plans. As it

becomes more widespread, librarians will gradually acquire teaching competencies and the degree of reticence about a duty that they have not traditionally had will be overcome.

- Instructional designs have not been based on students' levels of prior knowledge. Instead, training content has been defined in a more intuitive way, based on the course students were on or a superficial assessment of needs discussed with their lecturers. The lack of awareness of user profiles and their specific needs in the thematic area of their learning prevents more tailored and flexible training from being offered. A minimal, initial diagnostic evaluation of the target audience for the activities has not usually been carried out. An evaluation of the results has not usually been done either.

- The integration of these activities into the curriculum has not been good enough for them to have an impact, to be recognised or to be properly situated. If training activities are not done when and where (the curricular context) the need to search for information arises, or if they are not linked to subjects, then effort and motivation with respect to such activities is diminished. This is a common and serious problem, because the relevance of doing so is not appreciated.

- In training content, instrumental skills (using the library catalogue, databases and sources of specialised information) have prevailed over more conceptual content, such as selecting information available on the Internet, citation methods and the organisation of information. The predominant methodology used has been expository, which is not consistent with the rationale behind information literacy.

- Attendance for advanced training activities (accredited or extracurricular) is usually very low in comparison to the huge success of training activities carried out to welcome new students. This would indicate that they are not linked well enough – from the students' point of view at least – to their academic interests, or that students do not see any benefit in them. It is the students who have attended training activities that are precisely the ones who are more aware of the need to acquire information competencies, not those students who have shortcomings.

With regard to the organisational aspects of information literacy services:

- There has been a shortage of human and financial resources to incorporate these competencies, particularly in small libraries. When overloaded with duties, information literacy may be put on the back burner; if it is a priority issue, then the organisation needs to adapt to it. Libraries with a greater awareness of this issue have systematic information literacy plans and reflect this in their organisation charts.

- The new role of librarians has not received sufficient recognition. Today, librarians are advisors and consultants on the utilisation, use and relevance of resources that the community can use, which makes their involvement in teaching very variable. Sometimes they take part actively in doctoral programmes when academic rules do not contemplate such involvement, and they teach practically all of the programmes of some subjects outside their working hours, with or without any financial recognition. However, this is something that largely depends on the environment's motivation and predisposition.

- Even though libraries are now more recognised by teams of deans and rectors, institutes of education science or IT services, more institutional support is still needed, either that or an overall policy to develop information literacy in a generalised way for all degrees.

4. Advances, Opportunities and Strengths for Information Competency Teaching in Libraries

The above-mentioned difficulties do not undermine the fact that significant advances have indeed been made in recent years. In reality, libraries have always carried out user training in a more or less explicit way: through user reference and consultation interviews, introductory sessions for new students, on-demand bibliographical instruction on specific resources and sources of information, the publication of explanatory guides and so on. From the late 1990s, (Gómez Hernández, 2000), these were gradually extended to deal not only with resource-use skills, but also with more complex competency-related issues. Today, all libraries offer information literacy programmes containing basic or advanced activities – whether self-directed or included in teaching programmes – with a wider variety of content. Libraries also offer activities for teaching and administrative staff, courses on virtual platforms, tutorials available on library websites, face-to-face or online (via e-mail or chats)

consultation-response services, collaboration with lecturers on theory lectures or practicals, collaboration with students on their final projects, virtual campus courses, Social Web activities[1] and so on. These offerings are highly valued by those making use of them, and librarians are becoming more and more involved with fewer reservations.

In recent years, libraries have also taken a number of organisational decisions to consolidate this service, such as: considering the inclusion and recognition of the librarian-trainer in library organisation charts; incorporating this service into the priority lines of strategic plans, institutional evaluation processes and service charters (Roca, González & Mendoza, 2006); modifying and adapting spaces in libraries to create training rooms equipped with computers, projectors and other teaching resources; strengthening relations with governing teams and deans' offices of universities in order to include library presentations or content in different teaching spaces and times; and training working groups.

The EHEA has created a favourable climate for information competency because it recognises it as a generic issue in white papers and in new degree curricula, fostering learning methods that effectively help it to be transferred to all disciplines. Vice-rectors' offices for EHEA affairs and institutes of education science grant institutional subsidies to improve teaching; there are technological resources; educational training is supported; and, after the initial questioning of the Bologna Process, we believe that teaching culture is evolving. A number of ways to include regulated information competency are being considered, and lecturers are requesting the collaboration of librarians. Libraries have an ever stronger presence on virtual campuses, social networks, new student welcome days and university career fairs. In subjects that libraries take part in, services are better oriented and adapted to users' needs and practices, and there is greater cooperation between different services connected with generic competency learning. Thus, relations between language services, career guidance centres, institutes of education science, educational psychology guidance services and IT services are becoming stronger.

5. What Can Be Done to Keep Moving Forward?

It is logical that institutions like universities should change slowly, and it is essential to carry on working together towards lifelong literacy. For example, it is necessary to maintain and strengthen a knowledge of practices – and to adapt to the practices of digital natives – in order to develop new educational strategies for trainers. This implies that librarians should learn to use the potential of the Social Web's participatory technologies, such as wikis, blogs and social networks, to foster information competencies in informal learning contexts that, today, are becoming an integral part of university students' lives. In a context of information overload, attracting the users' attention in their environments is very important, as is knowing what they want and need, and how to deliver it to them.

It would be a significant step forward if information and digital competencies were a specific and compulsory subject for every degree. This has been achieved in some universities with departments of library science and documentation, where their libraries are well-positioned. This is the case at Carlos III University in Madrid. However, most degree courses are now shorter and departments are interested in holding on to as much teaching as possible. Together, these two factors will probably prevent this model from spreading to other universities. Therefore, as a basic competency that students will have to attain, this competency will need to be situated and related to the specific content of different subjects, final practicals and final projects. It is anticipated that information literacy will be attained by articulating the endeavours of lecturers in their particular subjects and helping them to include information literacy content. Librarians will provide support through complementary courses, tutorials, teaching materials, e-learning or blended learning courses, and work guidance in libraries and virtual spaces (Area, 2007). This will be a great opportunity for librarians to become learning mediators in cooperative environments, a role that, in Spanish, we have termed "entrenauta" (Gómez Hernández, 2008).

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1. REBIUN (2008b, c) compiled a list of almost 400 tutorials or guides of an instrumental nature (relating to specialised documentary products and databases), and around 100 courses on competency-related aspects such as information selection, evaluation, reworking or distribution. Some libraries have almost 100 tutorials for databases and other sources of information; they manage to get most new students to take part in introductory sessions; they have regular courses and participate in subjects as collaborators. For example, in the 2006-2007 academic year, the library service at the Technical University of Catalonia (UPC, 2007) organised introductory sessions that were attended by 3,967 out of 5,883 new students (67% of the total), took part in lectures of 100 subjects (in a variety of university degrees), and taught five courses with three recognised credits in information management (also in a variety of degrees) and nine courses focusing on preparing final projects. They also had 11 master's degree subjects with recognised credits and a further eight without accreditation, and taught sessions on two doctoral programmes.

This interaction with lecturers needs to be developed at all levels. Librarians should consider them as allies and sources of mutual support by:

- Helping them to keep up to date by providing individual assistance, depending on demand, relating to the sources and tools that they need, at the time and place of their choice. This will ensure that students learn about and subsequently work with these sources.
- Using informal approach mechanisms that work, even though their physical use of the library may be lower due to electronic access: regular talks, such as "technology cafés".
- Providing them with teaching materials and ideas that make it easier for them to work on information literacy in their particular subjects; suggesting joint practicals, offering evaluation criteria or offering to carry out evaluation directly.
- Offering librarians' collaboration in the organisation, training and evaluation of final projects, from the viewpoint of bibliographical correction, reviewing sources relevant to the sector, good structuring of the project and so on.
- Offering institutes of education science and other educational services for lecturer refresher training the chance to include information literacy courses in their programmes, particularly on the use of documentary resources for teaching and research.
- Directly offering the courses that libraries run each year in faculties, with academic recognition agreements to ensure that students take part.
- Providing all the technical, material and human resources (in the same as the CRAI or "resource factories") for libraries to produce teaching and learning materials that lead to changes in traditional teaching.
- Helping to define, design and programme the basic information management competency, so that it can be developed and incorporated into the curriculum, with examples like the UPC guide (2008).
- It is also necessary to work together on the question of how to evaluate information competencies and the results of training actions, not so much (or only) for qualification purposes, but rather for fostering metacognitive processes, their application to new contexts and their transfer.

We believe that the good practice recommendations for developing information literacy services adopted by REBIUN (Spanish Network of University Libraries) (2008a) all point in this direction, as do the conclusions drawn from conferences attended by information literacy managers from various libraries (REBIUN, 2009). In addition to these, we feel that it is important to:

- Try and obtain external accreditations for information literacy training programmes, which are accepted and valued by future employers.
- Cooperate with secondary schools to ensure that pupils arrive at university with an information competency base.
- Train librarians in new teaching methodologies, in an attempt to motivate them to face up to the challenge of competency training and to become part of interdisciplinary teams alongside IT specialists and lecturers in a confrontation-free manner.
- Integrate digital competencies and information competencies, something that we feel is logical so long as the instrumental components do not displace the reflexive and critical components of training (REBIUN, CRUE-TIC, 2009).
- Use 2.0 tools, websites and social networks, and be prepared for Web 3.0, all the while bearing in mind that they are a means to an end and not an end in themselves, on the basis of a plan that gives them meaning.
- Not to leave aside face-to-face sessions, since the concept of information literacy does not imply virtuality, and attempts should be made to ensure that they are very practical and active.
- Try to be useful allies of teaching staff; if they come to a library to seek a solution to a problem, it will be much easier to collaborate on information literacy.
- Carry on promoting the new image of libraries and communicating their initiatives in this sector.

To give an example of libraries that have systematised information literacy teaching, we would mention the library at the University of Seville (2009), because it has a description of its training offerings in basic, intermediate and advanced subjects for undergraduate and graduate students. In addition, it synthesises and integrates models developed by universities like the Open University of Catalonia (UOC), Pompeu Fabra University, Rovira i Virgili University, the University of La Laguna, Pablo de Olavide University, Carlos III University and the UPC. The UPC programme is very strong (UPC, 2007). It has training subjects and activities for undergraduates, final projects, graduates, teaching and administrative staff,

subjects for face-to-face learning and virtual campuses, evaluation criteria for these subjects, teaching methods and teaching activity proposals. In the University of Seville's case, we would underscore the introduction of the philosophy of Social Web participation in the development of this training, with blogs and wikis for lecturer training and support, and the production of guides that are cooperatively updated and completed. Another case worthy of note is the library at the University of Granada, which also manages trainer training courses via its virtual campus. The concern for educational consistency is demonstrated by the teaching methods being considered for these activities: the use of a portfolio as a student learning and self-evaluation method, tests by module, discussion forums, coursework related to other subjects, research diaries, practical exercises and so on.

Final Reflections

Libraries are making a considerable effort to develop information literacy services, through self-directed learning (while trying to situate the objectives, tasks and levels with students) and cooperation with lecturers, so that the latter can incorporate content into their teaching-learning activities that contributes to students' information competency. It is a long and arduous process because of the slow pace of change in university culture and a considerable number of determining factors ranging from the levels that students have on arrival at university to the characteristics of scientific information in the different disciplines and the confluence of interests in university organisations. Today, several years after the implementation of new degrees, the recognition of a basic competency to use information efficiently – a competency that is connected with others – may lead to a greater integration of libraries and their information literacy services into teaching processes. Faced with an apparent "disintermediation" with regard to accessing and using information flows, information literacy has become one of the main services that libraries are able to offer. In order to attain the objectives of information literacy when learning activities are undertaken, training should be planned by taking account of the students' prior knowledge, the students' practices and activities and the students' needs. Cooperation with lecturers and an evaluation of results are also necessary. It would be unacceptable for university students to complete their education without attaining information competency, since it is a prerequisite for lifelong, cooperative and self-directed learning. Managing to deliver a higher education

that measures up to the demands of the 21st century is a challenge for librarians, lecturers and students alike.

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Lecturer in Library Science at the University of Murcia since 1988, where he has worked as a librarian and has been dean of the Faculty of Documentation, coordinator of Cultural Projection and director of Editum, the university's publishing service. After his thesis entitled *La función de la biblioteca en la educación superior* (1995), he began to disseminate knowledge about information literacy services offered by libraries, in the Spanish-speaking context, through works like *Estrategias y modelos para enseñar a usar la información* (2000), the journal *Anales de Documentación* and the blog *ALFIN*, included on the Alfared platform. He has published articles on academic libraries and library management and marketing. He is a member of *Thinkepi* and the editorial board of *Library Review*.

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