

Library and Information science in Spain: an assessment of 40 years of university studies

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Abstract

Universities first taught Library and Information science (LIS) studies in Spain in 1982, reaching a zenith at the end of the 1990s. However, from 2000 onwards, student enrolment began to drop and some programmes closed, producing a crisis in the studies on offer, which is yet to end. The evolution of LIS education in Spanish universities over 40 years is analysed and its future is evaluated based on the opinions of academic leaders from Spanish university centres that offer LIS degrees. The article aims to provide a detailed analysis of the opportunities, threats and necessary priorities in the field and a general assessment of its chances of remaining an independent discipline. 23 interviews were carried out with lecturers of the Spanish university system, and a Likert questionnaire was responded by 34 experts. Disappointments are noted: loss of interest in the subject, failure to generate academic and professional visibility, and failure to take advantage of technological change to position the field in the mainstream. Opportunities: orienting the degree course toward new topics, and prioritising postgraduate programmes. Threats: loss of students, failure to convey the value of the discipline to society, and failure to redefine its profile. Priorities: adapting current qualifications more closely to needs, participating in European research projects, and adopting technological change. More than 60% of the respondents agree that Library and Information science will remain an independent discipline in the short and medium term, while 20% disagree, although they do not see this as a problem.

Keywords

Education; LIS; Librarianship; Information science; University studies; Academic programmes; Curricula; Crisis; Interviews; Likert survey; Challenges; Threats; Prospective; Evolution; Future; Opportunities; Priorities; Assessment; Spain.

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1. Introduction

Certain university studies, such as medicine, law and engineering, manage to maintain high enrolment numbers and constant interest from students. This is not the case with Library and Information science (LIS), which has a much more limited reception and constant fluctuation in student enrolment numbers.

These peaks and troughs in the university education numbers have affected all countries. As **Dalrymple** (1997) describes it for the United States and Canada, first there were the glory days, with high numbers of students and accredited programmes (in the 1970s). This was followed by a crisis leading to the closure of schools and programmes (the 1980s), and finally ended with a limited recovery (the 1990s). The same instability is found in Australia: a slow start (1960s), rapid growth (1970s), relative stability (1980s) and then steady decline (from the 1990s onwards) (**Wilson et al.**, 2010). The decrease is made more evident when one looks at numbers of university faculties: in Great Britain there is now only one autonomous school and one department, where once there were 15 in 1985 (**Marcella; Oppenheim**, 2020), while in South Africa the number of centres dropped from 18 to 11 in the 2000-06 period (**Ocholla; Bothma**, 2007). As discussed below, Spain has also experienced a peak followed by crisis, with no clear sign of how the hoped-for recovery can be achieved.

There are numerous analyses of university LIS education, covering practically all parts of the world, including Europe (**Borrego**, 2015), Great Britain (**Lowe**, 2006; **Marcella; Oppenheim**, 2020), the United States (**Dalrymple**, 1997), Canada (**Curry**, 2000), Australia (**Harvey**, 2011; **Weatherburn; Harvey**, 2016), Asia (**Miwa**, 2006; **Kaur**, 2015), India (**Kumar; Sharma**, 2010; **Kaur**, 2015), and Africa and South Africa (**Ocholla; Bothma**, 2007), among others, who all adopt a largely descriptive approach. The word “crisis” is present in many of these analyses (**Dillon; Norris**, 2005), leading to reflection on challenges and opportunities in LIS education (**Cronin**, 2012).

The first university LIS studies in Spain were taught in Barcelona in 1982, after approval of the general directives for the diploma in LIS (*Spain*, 1981). Since then, as discussed below, they quickly became popular, offering a wide range of university programmes [initially diplomas, pre-European Higher Education Area (EHEA), degrees and doctorates, followed by bachelor’s and master’s degrees from the mid-2000s], while the peak in student numbers was reached at the end of the 1990s. From 2004, numbers started to drop, as first detected by **Delgado-López-Cózar** and **De-la-Moneda-Corrochano** (2008), which **García-Marco** (2008) diagnosed as the “first crisis of a downturn in growth”.

The topic of university LIS education in Spain has produced a great deal of literature (**López-Yepes**, 1995; **Abadal; Miralpeix**, 1999; **Delgado-López-Cózar**, 2003; 2008; **Delgado-López-Cózar; De-la-Moneda-Corrochano**, 2008; **Abadal**, 2013; **Ortiz-Repiso et al.**, 2013; **Ortiz-Repiso**, 2015; **De-la-Moneda-Corrochano**, 2014, 2018; **López-Borrull; Cobarsí-Morales**, 2017; **Muñoz-Cañavate; Larios-Suárez**, 2018), which has tracked changes in a variety of university degree programmes. Most of these studies are descriptive, based mainly on a statistical analysis of enrolment numbers, teaching staff and so on, or on the content and orientation of programmes of study.

“This study is based on the opinions of the heads of deaneries or heads of departments in LIS in the last 40 years”

This study aims to provide a different, complementary viewpoint, as it is based on the opinions of people who in the last 40 years have held positions of responsibility in the organisation and design of degree programmes in the field (either deans or department directors). This is a unique approach that could complement existing literature on changes in LIS studies and help raise analysis beyond quantitative data on degrees and enrolment numbers, in order to assess the road travelled up to now and predict possible future scenarios.

The interviewees and survey participants all held leadership positions in their institutions. This implies they have certain qualities, such as experience, intelligence, self-confidence, a sense of responsibility, persistence, interpersonal skills (**Lindgren; Harvey**, 1981), team management skills and the ability to exert an influence in the institution (**Katzenbach; Smith**, 1997; **Haslam et al.**, 2011).

2. Objectives and methodology

The general aim of this study is to analyse changes in LIS education and assess its future perspectives, based on the opinions of leading academics (deans and department directors) in Spanish universities where LIS degrees are taught. The analysis of the changes in university studies covers a period of almost 40 years and adopts two perspectives: towards the past, to identify the main achievements, disappointments and collaborations with other fields of study; and to the future, to provide a detailed analysis of opportunities, threats and necessary priorities, together with a general assessment of the chances of LIS remaining an independent discipline.

This is a qualitative study based on the opinions and assessments of teachers with management experience in centres that teach LIS degrees, as both deans and department directors, given that, as the promoters and managers of university degrees, they are more familiar with the development and current state of the studies (for this reason no professionals were included). Two data collection techniques were used: structured interviews, followed by a survey using a Likert scale.¹

“ The debate on the recognition of qualifications by the sector and the vision of professional associations and associations can help to create a global vision that allows us to understand and analyse the past with the best intention of helping to succeed in the future ”

The questionnaire is adapted from a similar study carried out in the United Kingdom (**Marcella; Oppenheim, 2020**) and divided into three main sections: firstly, descriptive data on the interviewees' management experience; secondly, their assessment of changes in LIS education (achievements and disappointments) based on their experience; and, finally, their vision of the future of LIS studies (opportunities, threats and priorities). The questionnaire is available for viewing on Figshare:

https://figshare.com/articles/online_resource/Preguntas_encuesta_y_entrevista_ByD_2020/13108301

The questionnaire was tested in face-to-face interviews with four lecturers from the sample to assess the suitability and intelligibility of the questions before its definitive use. Next, a list of university lecturers who had held management positions in centres offering LIS was drawn up and a non-probabilistic sample of 30 people from different centres was established. The questionnaire was administered as an oral or written interview, at the interviewees' choice, between November 2018 and February 2019. The answers underwent content analysis to classify them into different categories (achievements, disappointments, opportunities, threats, etc.) and the preliminary results were presented at the 2019 *Edicic* congress.

One of the limitations in the interviews was a lack of a hierarchy to assess the different categories (achievements, disappointments, challenges, opportunities and threats), as a wide range of issues was identified in all categories but not in order of priority. Thus a second phase of the study was planned, with the aim of reaching a consensus on the development, current situation and future prospects of the discipline among the survey participants (using the Likert model).

To do this, a survey was designed based on the answers given in the interviews, with the aim of rating the importance of each answer. As said, it is available for viewing on Figshare:

https://figshare.com/articles/online_resource/Preguntas_encuesta_y_entrevista_ByD_2020/13108301

The survey was structured into three blocks, as in the previous interview, but used a Likert scale to weight the importance of each statement taken from the interviews. The survey was sent to the interview group and other people mentioned during the interviews, making a total of 40 participants. A 20-day period was set for the survey (from 24 April to 18 May 2020) which was eventually answered by 34 people.

3. Context

The results discussed in section 4 are based on the assessment of the changes in LIS studies in Spain covering a period from 1982 (when the subject was created and was first taught) to the present day, just under 40 years. During this period of analysis, the LIS diploma and the pre-EHEA bachelor's degree in Documentation Science were created, then adapted to the European Higher Education Area (EHEA), the university bachelor's and master's degrees were approved, and new bachelor's degree courses were introduced. In order to situate these changes in time, the study establishes four main periods, taking the approval and introduction of the aforementioned university degrees as reference points. This is preceded by a discussion of statistical context.

3.1. Statistical data

To contextualise these four stages, we first present the basic statistical data on universities and student enrolment numbers for the different university programmes (diploma, pre-EHEA degree, bachelor's degree and master's degree). The sources used are student statistics provided by the Spanish *Ministry of Universities*, the statistics compiled by **De-la-Mo-neda-Corrochano** (2018), which provide total figures and a breakdown by university up to the 2016/17 academic year, and the internal statistics prepared each year by the *Red Universitaria de Centros de Información y Documentación* (*Spanish Network of University Information Science Centres, RUID*).

Over the period from 1982, 18 universities have offered university qualifications in LIS, firstly, as either diplomas or pre-EHEA degrees, and, later, as bachelor's and master's degrees. Currently, however, 16 centres remain, 12 of which offer the bachelor's degree (although this is being phased out at the UOC and reorganised at the *University Carlos III*) and 13 offering the master's degree. A further two centres, highlighted in grey (*CEU San Pablo* and *Vic*), stopped offering all their degree programmes some time ago.

Table 1. Centres teaching (or previously teaching) LIS degrees.

University	Start	Diplomas	Pre-EHEA degrees	Bachelor's degrees	Double degrees	Master's degrees
<i>Alcalá</i>	1994	--	✓	--	--	✓
<i>Autònoma de Barcelona</i>	1999	--	✓	--	--	✓
<i>Barcelona</i>	1915	✓	✓	✓	✓	✓
<i>Carlos III de Madrid</i>	1990	✓	✓	✓	--	✓
<i>CEU San Pablo</i>	1994	✓	--	--	--	--
<i>Complutense</i>	1990	✓	✓	✓	--	✓
<i>A Coruña</i>	1996	✓	✓	✓	--	✓
<i>Extremadura</i>	1994	✓	✓	✓	✓	✓
<i>Granada</i>	1983	✓	✓	✓	✓	✓
<i>León</i>	1991	✓	--	✓	--	--
<i>Murcia</i>	1988	✓	✓	✓	✓	✓
<i>Oberta de Catalunya</i>	1999	--	✓	✓	--	✓
<i>Politécnica de València</i>	1997	--	✓	--	--	✓
<i>Pompeu Fabra</i>	1999	--	--	--	--	✓
<i>Salamanca</i>	1987	✓	✓	✓	✓	✓
<i>València</i>	1996	✓	--	✓	--	--
<i>Vic</i>	1998	✓	--	--	--	--
<i>Zaragoza</i>	1989	✓	--	✓	--	✓

The bachelor's degree (and previously the diploma and pre-EHEA degree) has been the mainstay of LIS education in Spain. Figure 1 shows the trends in student enrolment for the reference period of just under 40 years.

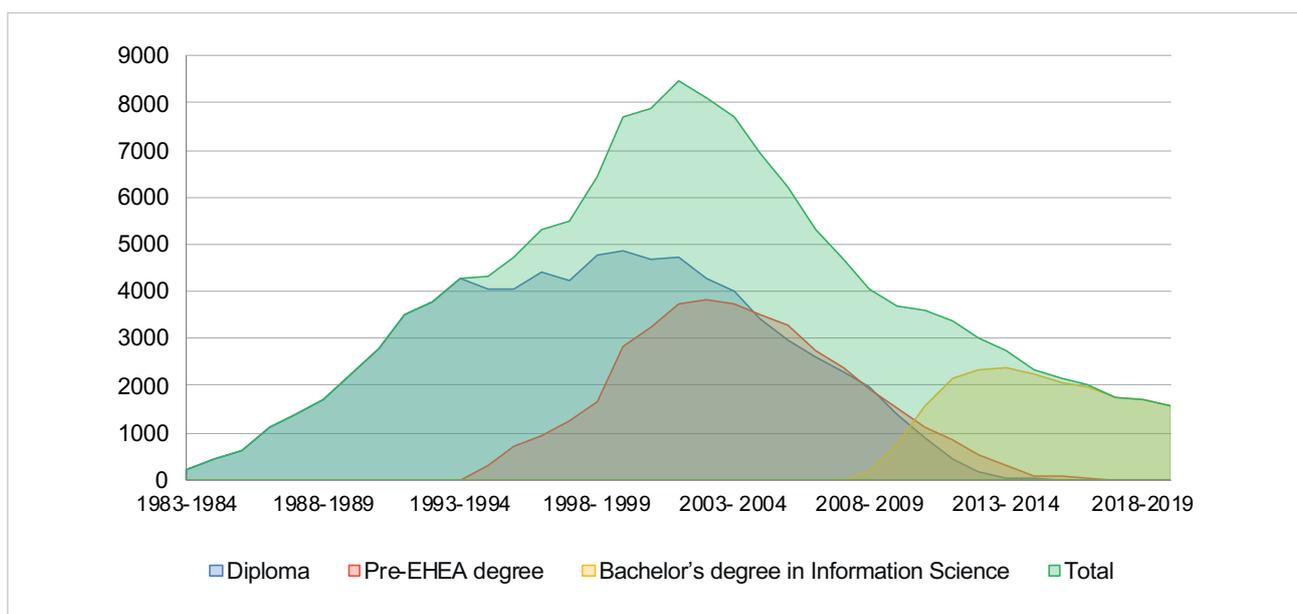


Figure 1. Changes in total student enrolment numbers (diploma, pre-EHEA degree and bachelor's degree).

Source: Student statistics from the Spanish *Ministry of Universities* (2015-2020), and De-la-Moneda (2018) (**provisional data for 2019/20).

The statistics on master's degrees for both courses offered and student enrolment are harder to come by. **De-la-Moneda-Corrochano** (2018) provides descriptive information on 28 master's degrees related to LIS for the 2017/18 academic year. The *National Agency for Quality Assessment and Accreditation (Aneca)* website has a search system that includes almost 10,000 university degrees in Spain, but only provides filters for five major branches of knowledge, making it impossible to obtain a list of degrees offered by LIS centres.

With regard to student numbers, Figure 2 provides data for the last five years, showing a significant difference in enrolment (835 for master's degrees compared with 1,566 for the bachelor's degree), as well as greater stability in the degree course. University master's degrees are an important area of specialisation and a means for professionals and graduates from other disciplines to enter ours. It is therefore a key option in LIS education and its importance should not be underestimated.

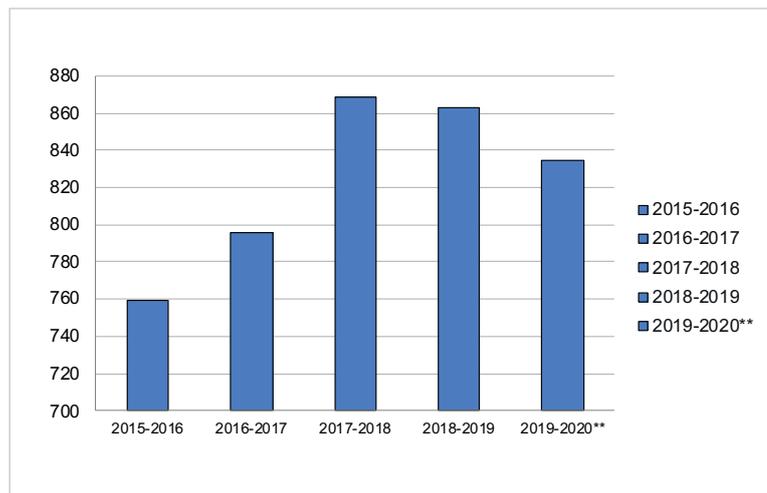


Figure 2. Changes in total student enrolment numbers for LIS university master's degrees. Source: Student statistics from the *Spanish Ministry of Universities* (2015-2020), considering the list of master's degrees from the *RUID*.

** Provisional data.
<https://bit.ly/3bSFNba>

3.2. Library and Information Science diploma

In 1982, the *Escola de Bibliotecàries* (School of female librarians), founded in 1915, was granted university status by affiliating with the *University of Barcelona* and began teaching the university diploma, whose programme of study followed official directives approved the previous year (*España*, 1981). A number of other universities started offering these new studies a short time later: *Granada* (1983), *Salamanca* (1987), *Murcia* (1988), *Zaragoza* (1989), *Complutense* (1990), *Carlos III* (1990), *León* (1991), *Extremadura* (1994), *CEU San Pablo* (1994), *A Coruña* (1996), *València* (1996) and *Vic* (1998), for a total of 13 centres in practically all the Spanish autonomous communities.

This was a period of dramatic growth in the number of centres and teachers, but especially in student numbers, which rose from 200 to 3,500 in the 1991/92 academic year (Figure 1).

3.3. Pre-EHEA degree

The demand for specific post-diploma, second-cycle studies led to the approval of the pre-EHEA degree (*licenciatura*, in Spanish) in Documentation Science, created by decree published in 1992 (*España*, 1992). This was a major success for the discipline, obtaining the highest level of university recognition just 10 years after the diploma had been introduced. The degree automatically followed on from the diploma, while requiring supplementary training for students from all other fields. Most of the diploma schools also started offering the degree, while some centres went directly to teaching the second-cycle degree, as was the case with *Alcalá* (1994), *Politécnica de València* (1997), *Oberta de Catalunya* (1999) and *Autònoma de Barcelona* (1999). By offering the degree, schools could then be called faculties.

It was during this period that student numbers reached their peak (2001/02 academic year), at almost 8,500, after which a steady decline began, falling to 4,600 in the 2007/08 academic year, as shown in the Figure 1.

3.4. Bachelor's degree in Information Science

Adaptation of Spanish university qualifications to the EHEA led to approval of the bachelor's degree in Information Science, and the phasing out of the diploma and pre-EHEA degree.

The degree was based on a joint study by all Spanish centres to prepare the *Libro Blanco: Título de grado en Información y Documentación* (*Aneca*, 2004), coordinated by the *University of Barcelona*. Apart from issues related to content organisation, the main change in the bachelor's degree was the new name, which was more inclusive (also covering archival studies) and more general, with the idea of presenting a new image for the studies. This joint project's biggest contribution was the resulting consensus on both the name and the structure of the new Information Science bachelor's degrees.

The change meant that some centres, such as the universities of *Alcalá* and the *Politécnica de València*, stopped teaching first-cycle programmes and focused exclusively on master's degrees.

This period saw the continuing drop in student numbers, from 4,600 in 2007/08 to a little over 1,500 in 2018/19. Nevertheless, most of the teaching staff were kept on, as many were tenured staff who had been highly productive in research and publications (**Abadal; Guallar**, 2020).

3.5. Creation of the new bachelor's degrees

The crisis in student numbers led to the closure of degree courses at the *University Carlos III* (2017) and the *Universitat Oberta de Catalunya* (2018), where demand was lower than for other degrees at these universities.

In the case of *Carlos III*, a new bachelor's degree was introduced, called Information and Digital Content Management (taught in the 2017/18 academic year), whose content put greater emphasis on digital information and less on classic librarianship. As described on the university website,

“the aim is to train professionals specialised in detecting companies' and institutions' information needs and finding solutions contributing to the digital transformation process. They will be capable of designing information and digital content services and products, and managing social media and online communities which further collaborate to maintain corporate reputations” (*Universidad Carlos III*, 2020).

As can be seen from the programme of study, it includes a larger number of subjects focused on the more technological competencies of digital management, with greater emphasis on programming, metrics and web positioning, while eliminating classic librarianship subjects. The development of digital transformation-related requirements includes new management competencies to cover a wider range of potential employees.

After the experience of the *University Carlos III*, other universities have followed a similar path. Thus, the *University of A Coruña* started offering the Digital Information and Documentation Management degree in the 2019/2020 academic year (*Universidade da Coruña*, 2020) and the *University of Murcia* started a degree with the same name and approach as that of *Carlos III* in September 2020 (*Universidad de Murcia*, 2020).

It may be too soon to say whether the new degree will permit better adaptation to the needs of both the labour market and students' demands, in an increasingly broad and competitive environment and range of qualifications and a large number of new professional profiles created by new needs and competencies in the online and technological sphere, such as content curators, community managers, big data and data viewing and management.

“The short and medium-term scenarios to promote LIS studies are based on diversification: renewal of the degree, double degrees, masters and presence in other university degrees”

3.6. Future scenarios

In our opinion, the current short- and medium-term scenarios for strengthening university LIS studies are the following:

a) Renewing the bachelor's degree

Strategies for reforming the degree course (*Barcelona, UOC*) or creating new degrees (*Carlos III, Murcia, A Coruña*) may help maintain current student numbers. Increasing the number of students making it their first-choice degree programme when applying for university, or even setting a degree entrance mark that improves academic performance and reduces drop-out rates, is also worth considering.

b) Investing in master's degrees

In our opinion, strategic reflection is needed on master's degrees and how to strengthen them, so as to attract students from other fields, provide them with the corresponding complementary training (in libraries, archives, business, school libraries, heritage and digital content, among other fields) and help them find professional employment, as many programmes and qualifications do not offer great employability levels. This option is available in countries where the discipline is more developed, such as the United States, Canada and the United Kingdom, where most LIS training is provided in master's degrees, which have a very different student profile from the bachelor's degree.

c) Double degrees

The creation of double degrees, particular in audiovisual communication and journalism studies (*Barcelona, Extremadura, Granada, Murcia and Salamanca*), has broadened entrance pathways to the Information Science degree and is a worthwhile option for increasing visibility among secondary school students.

d) LIS presence in other university degrees

This option is not discussed in our study, but it has served to provide additional places in the departments, inform students in other fields about the subject and generate collaboration with other departments. However, adopted alone it is insufficient to ensure specialist university training in LIS.

4. Results and discussion

Face-to-face or written interviews were conducted with a non-probabilistic sample of 23 people who had held positions of responsibility, including a minimum of one person from each of the 16 centres currently offering bachelor's or master's degrees (except for the *Universitat Politècnica de València*). The Likert scale questionnaire was completed by 34 people.

“We consider it important to carry out a strategic reflection on the master's degrees, as well as their empowerment, since they allow to attract students already trained in other disciplines”

The gender distribution was 10 women (43%) and 13 men in the interviews and 11 women (32%) and 23 men for the questionnaire. By way of context, only 30% of deans and 31% of department directors in Spanish universities were women in 2017 (Puy, 2018). In the specific case of LIS lecturers, we know that, in the 2016/2017 academic year, 52.81% of lecturers were women (De-la-Moneda-Corrochano, 2018), but there are no data on their presence in academic posts.

In terms of their studies, interviewees came from a wide variety of disciplines, mostly the humanities and social sciences, while only six people had exclusively studied information science (pre-EHEA degrees, master's degrees and doctorates), although 10 had broadened their training with LIS qualifications. Examples of less-related fields among the interviewees are medicine, physics and telecommunications.

The interviewees' and survey participants' contributions on their experience in management, opinions on changes in the field over the last 40 years and, finally, their assessment of the future are given below. The results also include a number of participants' specific opinions to illustrate some of the comments in a little more detail.

4.1. Management experience

A dynamic was observed among many of the interviewees in positions of responsibility whereby many accumulated several posts, repeated terms of office and held posts one after another. Most of them held their first such post in the 1990s, while a second large group started in the 2000s. Many of them still hold such posts now.

Significantly, many had had no training in management before taking their post, meaning most of them were self-taught. According to San-Juan-Fernández and Bueno-Villaverde (2017), there is no significant difference in the competencies required for management in relation to gender, type of university, form of teaching or managers' age, as our interviews confirmed.

“The vast majority of managers did not have any training in management tasks before accessing the position”

The main challenge associated with managing a department or faculty is the creation of new degree programmes, along with ensuring their sustainability, promotion and dissemination. Most of the department's activity involves degree programmes, as resources largely depend on the number of students enrolled.

Logically, the second group of challenges concerns the incorporation and promotion of teaching staff, given their key role in academic programmes. Ensuring team cohesion is another significant responsibility, especially in the earlier years of the period, as many teachers came from other fields.

A third block of challenges involves research: either starting it or obtaining funding. Although teaching and research go hand in hand, and one cannot exist without the other, in the early years of degree programmes teaching needs to be boosted, while more effort can be put into research in the medium and long terms. However, some interviewees clearly recall a lack of authority for deans and department directors to manage research:

“Doing research is a voluntary activity. Department directors do not have the capacity to determine or orient it” (19).

In last place among the group of challenges are participation in thesis committees and the creation and management of scientific journals, a significant activity for some universities.

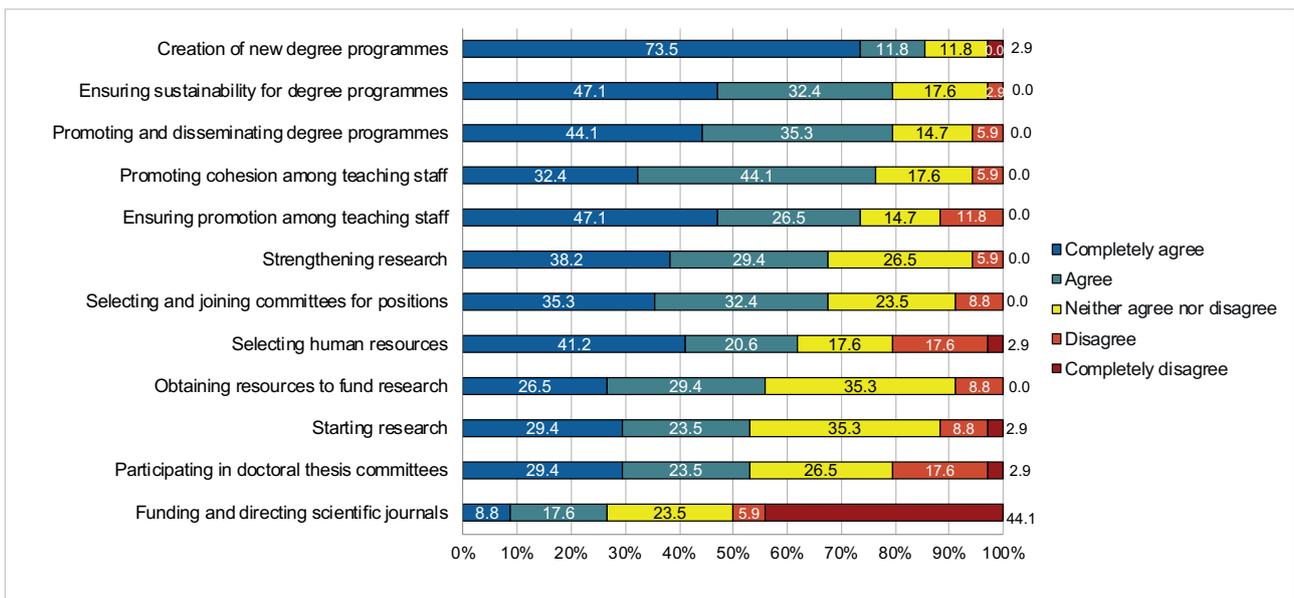


Figure 3. The importance of the main challenges in management positions

The next question attempts to identify and weigh the main changes in the period during which the interviewees held positions of responsibility. These can be classified into three blocks, based on the degree of agreement with each item. The most significant one in the first block is adaptation to the EHEA. The introduction of the Bologna Process' model and its consequences for teaching were initially looked on from afar and with a feeling of heading into the unknown, with a mix of uncertainty and expectation.

The second major change is the creation of departmental or faculty structures (in most cases preceded by university schools) and the coordination of research groups and doctoral programmes. This second block of changes also includes participation in drafting the *Libro Blanco: Título de grado en Información y Documentación*, by *Aneca* (2004), which required coordination and participation among all centres in 2003 and 2004, representing a unique and significant experience in the creation of a degree programme.

The third block includes participation in assessment agencies and department restructuring. There is a greater percentage of indifference for the latter, as each case is personal and individual, the result of change and a natural consequence in all companies and universities.

It is also worth mentioning that some interviewees noted other changes not included in the questionnaire. These are issues specific to particular universities which have had a significant impact in the field, such as creating a new degree programme or eliminating the Information Science bachelor's degree.

4.2. Change up to the present: 40 years of university life

This section reflects on how the discipline and its academics approached setting the foundations for quality university teaching and research. Participants were asked for their assessment of nearly 40 years of the field as a university study, focussing on positive aspects (achievements) and negative aspects (disappointments), while giving their opinion on collaboration with other fields and the current status of LIS.

4.2.1. Achievements

Most agreement among participants was regarding the enormous progress in research, especially in bibliometrics, which has increased the visibility of the field in other areas and has set a benchmark for science assessment. In this context, the creation of assessment agencies (such as the *Comisión Nacional Evaluadora de la Actividad Investigadora* [National Commission for the Evaluation of Research Activity, *Cneai*], the *Agencia Nacional de Evaluación y Prospectiva* [National Agency for Evaluation and Planning, *ANEP*] and *Aneca*) has been decisive in promoting this area of research, as it is a key instrument in scientific assessment. Notably, no one expressed complete disagreement with the first two statements, both related to research, unlike all other options.

Also mentioned, although to a lesser extent, were the capacity shown by LIS to modify and adapt rapidly to changes in the digital ecosystem and the Internet and the influence the field has had on Latin American LIS centres.

Creation and consolidation of studies comes lower down on the list, below assessment of research progress. Introducing the diploma and pre-EHEA degree courses was certainly a major achievement, as duly recognised:

“The second-cycle degree stands out as a major success” (I4),

and in some cases this was considered the finest period in LIS studies:

“The pre-EHEA degree and supplementary subjects would be the ideal model. That was the best period in my opinion. It was very successful” (I12).

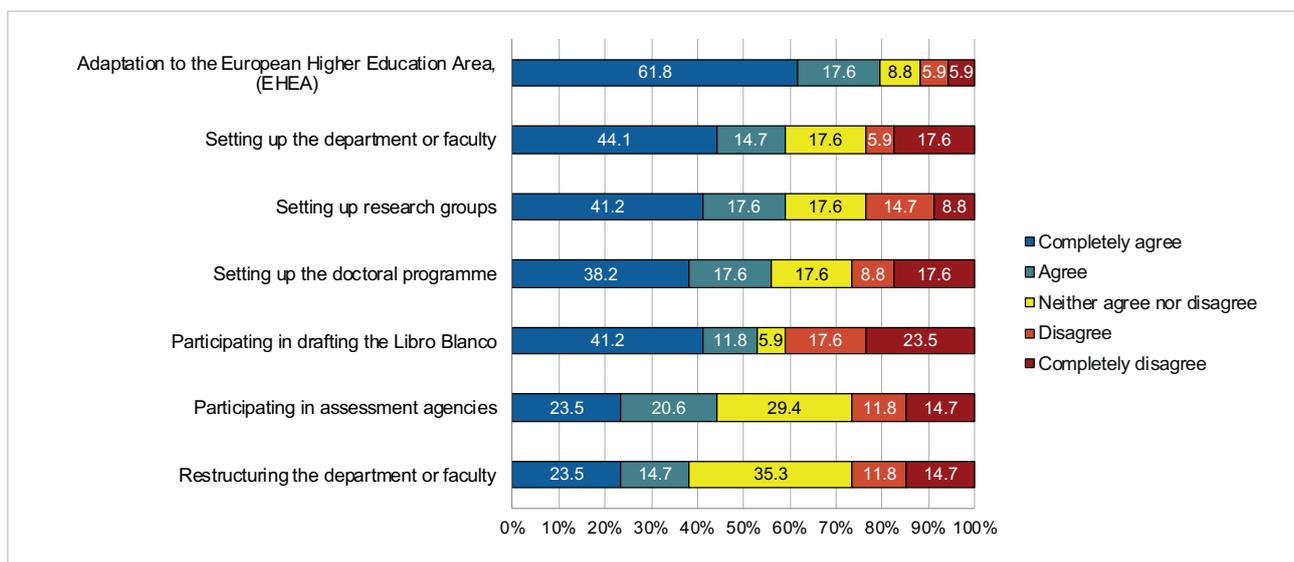


Figure 4. The main changes in the last 40 years

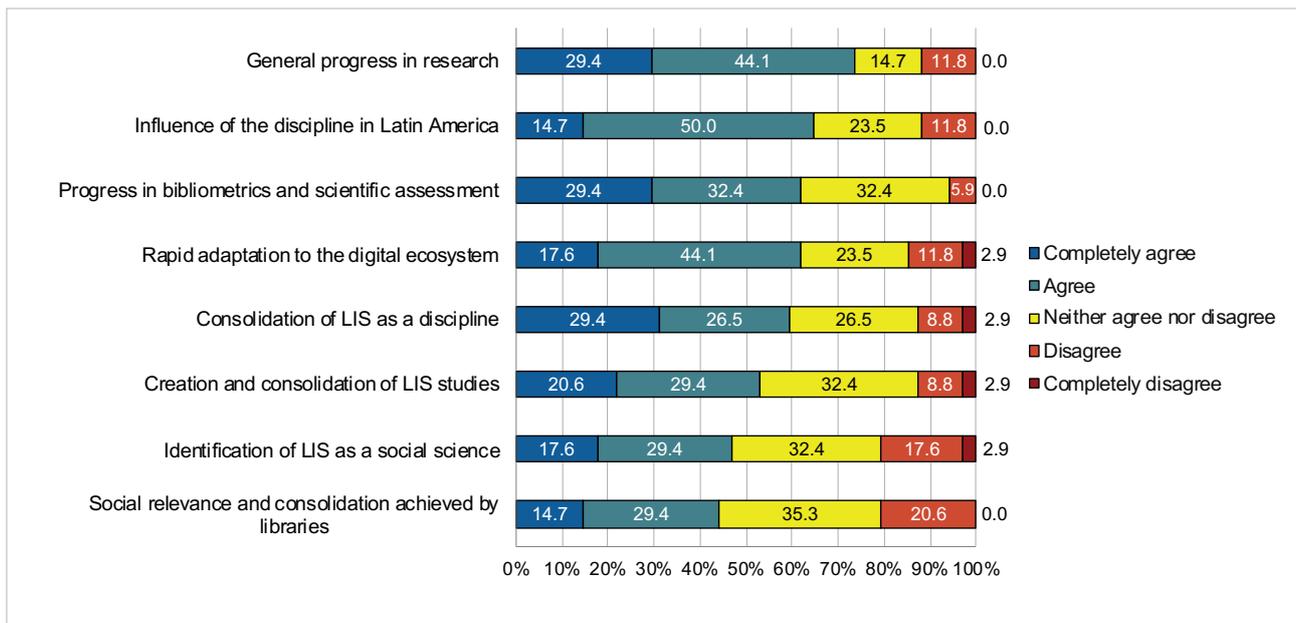


Figure 5. Main achievements in information science in the last 40 years

There are also two references to the consolidation of LIS as a subject and its identification as a social science. It is indeed remarkable how LIS gained recognition as a social science in its methodology in a relatively short time, thus providing both academic and institutional strength, as expressed by one of the interviewees:

“Consolidation: improved research; greater recognition as a social science in its methodology and training; from the initial stumbling to academic and institutional strength” (I6).

Finally, on a more professional level, participants drew attention to the greater social relevance and consolidation of libraries, especially in Catalonia, as they have taken on a more social, as well as cultural, role. This idea is expressed as follows:

“Libraries should be able to preserve their social role, and ensure the social conscience of their service remains active. By doing so, it will maintain its presence as a discipline and play a significant role in society” (I17).

However, as shown in Figure 5, there appears to be little agreement regarding the main achievements, as the interviewees prioritised a variety of aspects from the closed list. It is also clear that, in the eyes of the survey participants, achievements in education are eclipsed by the progress in research.

4.2.2. Disappointments

The loss of interest in the studies, as shown by the drop in student enrolment (discussed above), is without doubt the main disappointment mentioned by the interviewees. Thus, some refer to having reacted slowly to the loss of students, degree programmes that fail to match real demand, and a lack of postgraduate courses adapted to specific fields. They also mentioned the limited presence of the discipline in other degree programmes.

Directly related to this is the inability of LIS to generate academic and professional visibility. If the prestige of university LIS degrees and professional recognition of the field had been greater, student numbers would not have dropped. The digital revolution is also discussed, as interviewees noted the failure of LIS to become a benchmark in digital documentation or make the most of technological change to increase visibility for the discipline. The following comment, although it refers to archives, illustrates this limitation:

“We have failed to integrate and respond to archives in the digital transformation” (I13).

To a lesser extent, mention is also made of failing to contribute to the development and consolidation of school libraries, which would undoubtedly have increased career opportunities and maintained interest in LIS studies.

Lack of collaboration with other departments and other centres offering LIS degrees is also mentioned. Building stronger links and greater cooperation would have helped greatly in improving the educational offer.

As in the previous section, Figure 6 shows there is little agreement over the principle lost opportunities.

“ More than 60% of the responses consider that R&D will continue to be an independent discipline in the short and medium term, and 20% consider that it will not, but do not perceive it as a problem ”

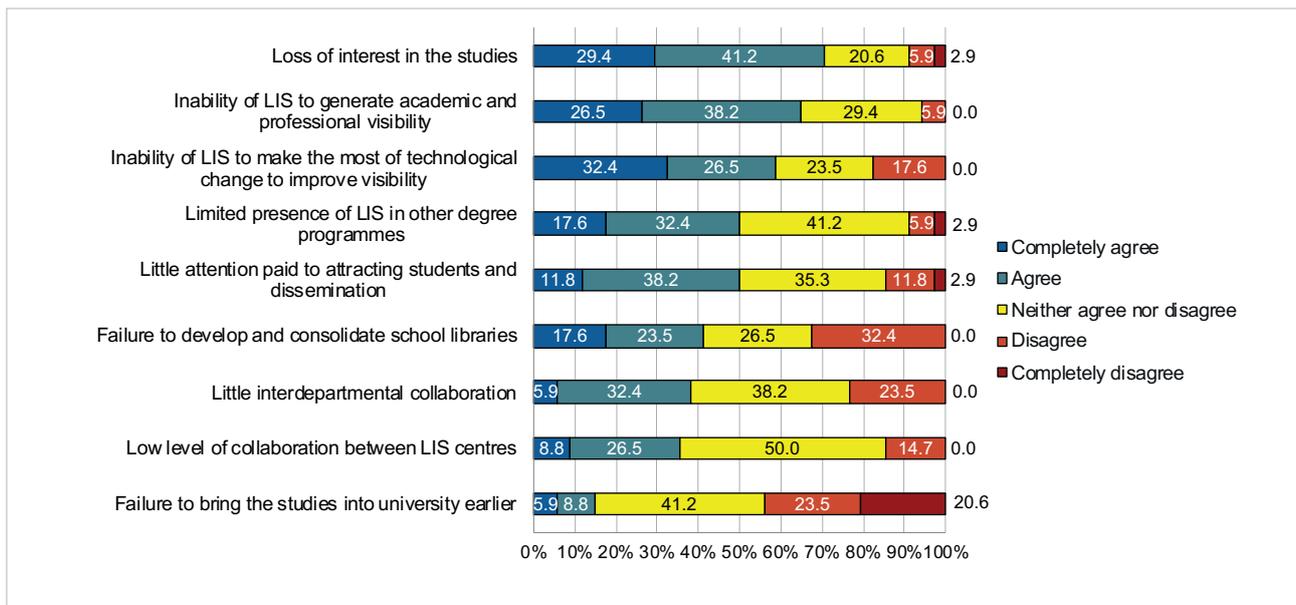


Figure 6. Disappointments and lost opportunities over the last 40 years

4.2.3. Collaboration with other disciplines

As shown in Figure 7, the most widely mentioned field of study in terms of collaboration, with few opposing voices, is computer science.

“[The relationship with computer science]... helped increase the faculty’s prestige and visibility, as several lecturers became closely involved with the faculty” (I11).

LIS has managed to adapt quickly to the digital ecosystem, as highlighted in achievements (Figure 5) and, as shown below, in priorities (Figure 8), where there are calls for “accepting technological change”. Such digital transformation goes hand in hand with the field of computer science, yet this has failed to produce joint programmes or organisational associations.

Logically, communication studies is ranked in second place, given the extent of integration in a number of Spanish centres offering both degrees and the number of double degrees in Information Science and Communication. Next, three fields are mentioned that have been present in the bachelor’s degree programmes: historiographical science and techniques, statistics and economics and business studies. Reference is also made to health and experimental sciences, which are generally absent from programmes of study, but which have participated in joint research and are also present in some departments in this field (as in the case of the *University of Valencia*).

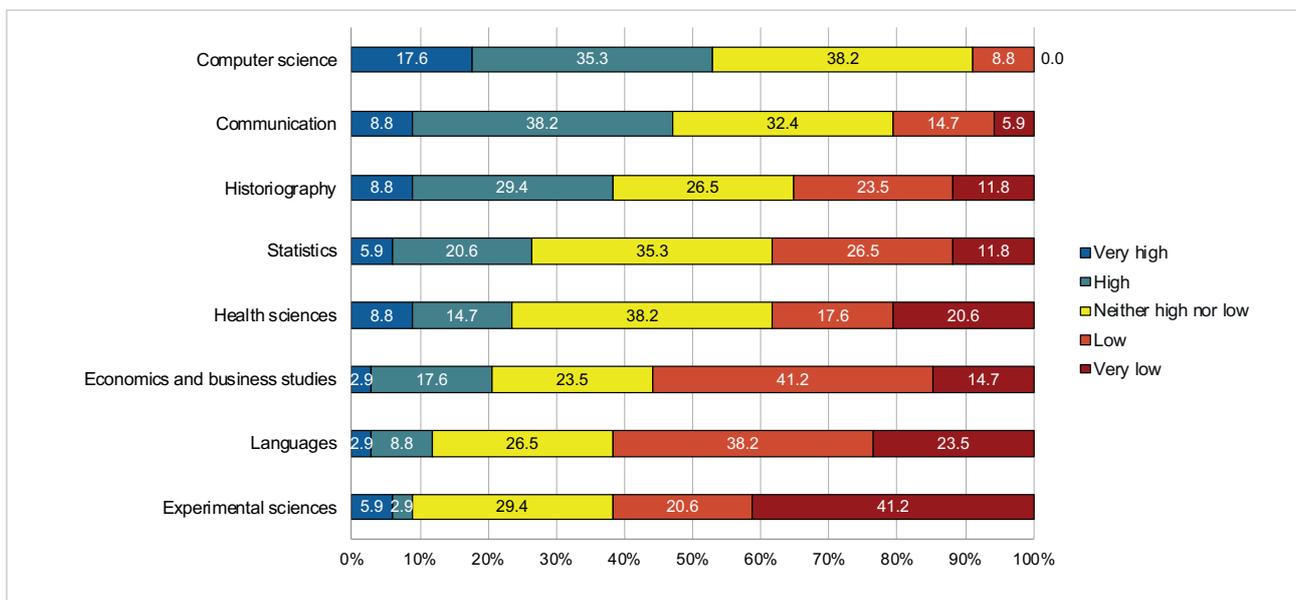


Figure 7. Degree of collaboration with other subjects in the last 30 years

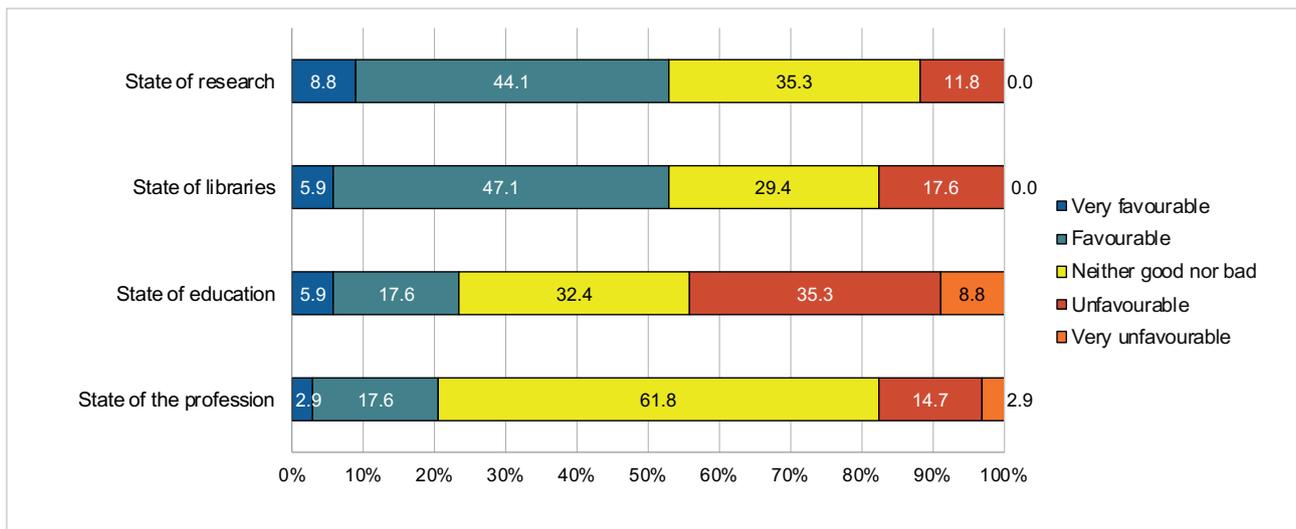


Figure 8. Current state of LIS

The diversity of subjects mentioned indicates the open nature of LIS and its interest in collaborating with other disciplines. There is also a subjective side to assessing collaboration, given that it does not just depend on the field of study but also on the people representing it in a given university. Thus, one interviewee describes a bad experience in one university in relation to computer science, which is the most widely mentioned discipline.

Finally, it is curious to note how little the *iSchools* association is mentioned, as it champions joint work with other disciplines and some centres are members (Cobarsí-Morales, 2018).

4.2.4. The current state of Library and Information Science (LIS)

The question on the current state of LIS is divided into four areas, as a means of obtaining greater detail in the assessment. Based on the scores (Figure 8), the state of research and libraries is clearly seen as very favourable or favourable (in over 50% of the opinions), while positive scores for the profession and education are below 25%. This critical, even pessimistic view of the current state of the two fields acknowledges that the discipline is at a crossroads and needs to advance or apply significant changes if it is to adapt to new training and professional needs. A lack of clear answers and convincing, consolidated strategies adds to this negative view of the situation. We have a problem and are yet to find a way of solving it.

4.3. The future

The final block of questions required participants to assess the future, highlighting opportunities, threats and priority actions, while also expressing opinions on maintaining LIS as an independent subject.

4.3.1. Opportunities

Figure 9 shows that the survey participants have a positive opinion of most of the proposals and see them as real opportunities. Only two (offering three-year degrees and changing the name) fail to receive 50% approval.

Offering a new orientation to the content obtained 82% agreement, understood as referring to bachelor's degrees. As shown in section 3.5, this strategy has already started, with new proposals launched in a number of universities (*Carlos III, Barcelona, A Coruña and Murcia*). The second option, reorientation towards new subjects (such as digital content and digital transformation) is directly related to the previous point, as it offers suggestions on how to orient new training programmes. It implies that the new orientation should include a major technological component that focusses on digital content and the digital transformation of our society.

Two strategies for broadening the LIS student base are discussed below. The first, offering programmes in general documentation science to other graduates, seeks to attract humanities and social science students, mainly to postgraduate and master's degrees, and received approval from 68% of survey participants. This option was highly successful for the pre-EHEA degree in Documentation Science, not only attracting high student numbers but also a high proportion of students from other disciplines. It is currently included in other postgraduate courses (see section 3.1), with striking enrolment statistics, although a still a long way from the figures for the pre-EHEA degree.

The proposal to focus on postgraduate studies is approved by 71% of participants (although with more rejections than the previous option) and represents a fundamental change in the strategy adopted until now, that of prioritising the bachelor's degree. There was already discussion on the presence of LIS as a bachelor's degree and postgraduate degree in the 1980s, with a heated public debate between those defending the creation of first-cycle studies (the diploma of that time) (Mayol; Massísimo, 1986) and those in favour of focussing on the second cycle, arguing that it would better suit specialist centres (Pérez-Álvarez-Ossorio, 1986; 1990). This debate has also occurred in the United States and Canada,

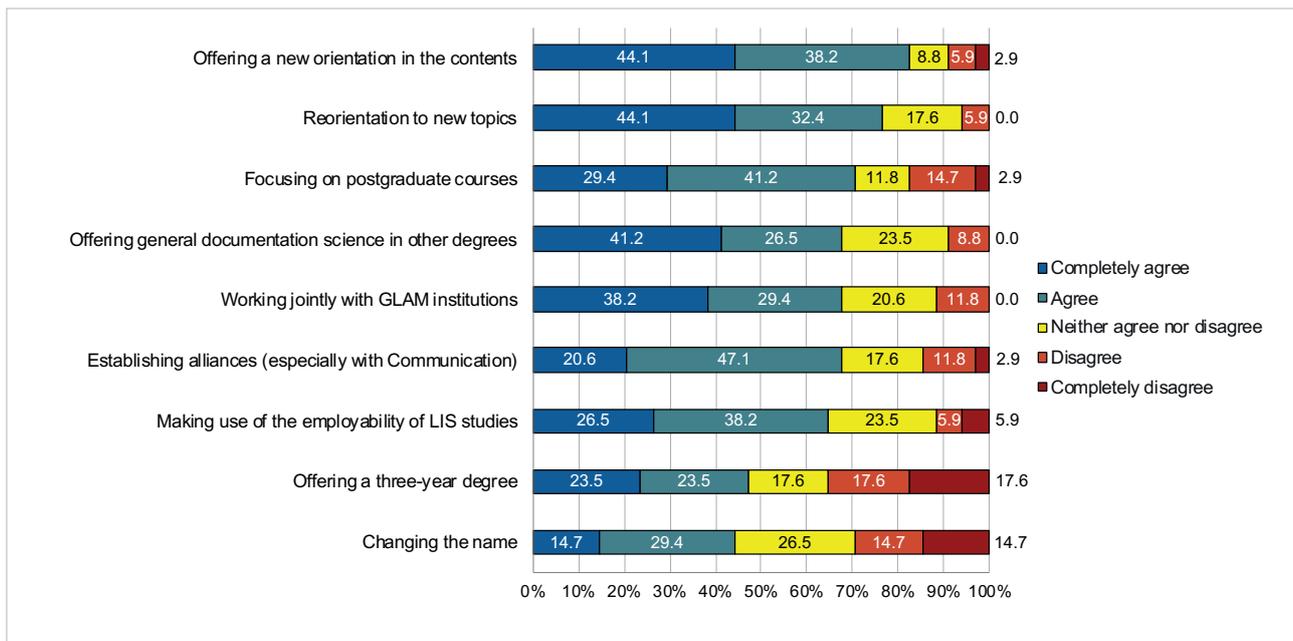


Figure 9. Opportunities for LIS education in the coming years

spurred on by the drop in student numbers, which forced many centres to cancel bachelor's degree programmes and focus exclusively on master's degrees.

In addition to the two previous issues, many of the survey participants (65%) felt that greater emphasis should be placed on the career prospects provided by LIS studies to increase visibility and student numbers. This is indeed a major asset, especially when compared to the job prospects in many other humanities and social science subjects. Clearly, this is seen as a good opportunity for many graduates in these fields, who are natural candidates for LIS postgraduate and master's degrees not only to complement their training, but also, more importantly, to enter the labour market. In recent decades, there have been numerous studies on joining the labour market, based on surveys among graduates (Tejada-Artigas; Moreira-González, 2003; Borrego *et al.*, 2004), or an analysis of job offers (Marquina, 2009; Abadal *et al.*, 2012). This shows not only the degree of interest in the issue but also the dynamic nature of the labour market, especially in more industrialised areas (Catalonia, Madrid, Basque Country and the Valencian Community).

Alliances are specifically mentioned in two of the options, both of which receive high approval ratings (68% in both cases). The first option is an alliance with galleries, libraries, archives and museums (GLAMs) and is accepted by 38% of participants. This idea goes beyond academia and clearly shows the professional orientation LIS studies have always had. The second option, this time in the strict context of universities, is seeking collaboration with other subjects, particularly communication studies (in this case accepted by only 20%). As seen in section 3, the drop in students has pushed many centres offering LIS degrees to incorporate studies from other areas (most frequently communication studies) or join humanities or social science faculties. How these collaborations work out is yet to be seen. To date, double degrees in Information Science and Communication seem to be one of the best joint strategies for attracting more students to LIS bachelor's degrees. Whatever the case, as shown above, the survey participants' approval of collaboration with communication studies in the last 30 years is less than 50% (Figure 7). Clearly that are aspects that need improving and strengthening in this area.

The three-year bachelor's degree obtained 47% approval, but was rejected by 35%. This route was opened up by an amendment to the University Reform Law (LRU, in the Spanish acronym), and for a time a window of opportunity existed in which bachelor's degrees would last for three years and master's degrees two, thus making LIS master's degree accessible to humanities and social science graduates, following the earlier second-cycle degree model, and improving prospects for enrolment numbers (Comalat; Abadal, 2016).

The change of name has been a matter of debate since the 1990s. It started with the need to find a name for the pre-EHEA degree, which was termed "Documentation Science" at that time. This name remained during the drafting of the Libro Blanco (Aneca, 2004), but eventually the name "Information Science" was proposed for the bachelor's degree. This was used until 2017, when the degree again underwent a renewal process, although this time lacking coordination among the centres. The problem in finding a new name that clearly identifies the content of the bachelor's degree has existed for 30 years and may remain unsolved in the near future. It has not been easy to find a name that is easily recognizable by society and particularly among secondary school students looking to enter university. There are widely contrasting opinions on this point, where some defend associating the name with the profession to avoid disconnection with the professional activity that gave rise to the studies:

“The bachelor’s degrees should have a name associated with the traditional activities: archives, libraries, documentation, museums, so as not to lose their identity. We could be more innovative and daring in the master’s degrees and postgraduate course” (I13).

Others call for a radical transformation in both name and content:

“I think there’s no chance of us surviving if we do not change the name, if we do not offer new training, if we do not abandon obsolete things such as cataloguing, history of libraries, palaeography and so on. We need to make a Copernican change and use our knowledge to offer new things, which to some extent many of us are already doing” (I8).

4.3.2. Threats

Figure 10 shows the scores for threats to LIS education in the coming years. In this case, only one of the statements, dissolution of LIS, is not considered a threat by most of the survey participants.

There is no disagreement that loss of students is by far the biggest threat to LIS at this time. Nevertheless, one interviewee criticised the lack of realistic assessment during the glory years:

“the growth in student numbers at the beginning was a bit of a mirage. [...] No critical analysis was conducted at that time” (I20).

Clearly, had growth been perceived as an “anomaly”, countermeasures would have been taken earlier.

Two further risks (“inability to define the profile” and “inability to transmit the value of the subject to society”) have a similar rating to the previous one, as is logical given that they are directly related threats: the profile needs to be redefined and the subject’s social visibility improved to prevent the loss of students. These two actions seem to have been poorly conducted, as the loss continues. The profile is now being redefined through new degree programmes, as discussed above, although it is still too early to assess the impact on enrolment. In the case of the bachelor’s degree, some interviewees mentioned the difficulties in reaching secondary school students and, in particular, communicating the objective of the degree, noting the

“Inability to reach a wider public, especially secondary school students” (I11)

and

“Maybe the audience is not 18 year olds” (I23).

Two further threats are directly related to teachers. The first is the reduction in numbers and ageing teaching staff, an obvious hurdle to introducing improvements to programmes of study. Statistical data (De-la-Moneda, 2018) show a steady growth in staff numbers (tenured and contracted employees) from 1998 to 2012, at which point numbers gradually begin to drop, coinciding with the economic crisis and lower enrolment. Poor morale among teachers is also mentioned. Unlike the previous point, this is not a structural issue and no explanation as to its origins is provided. In the case of

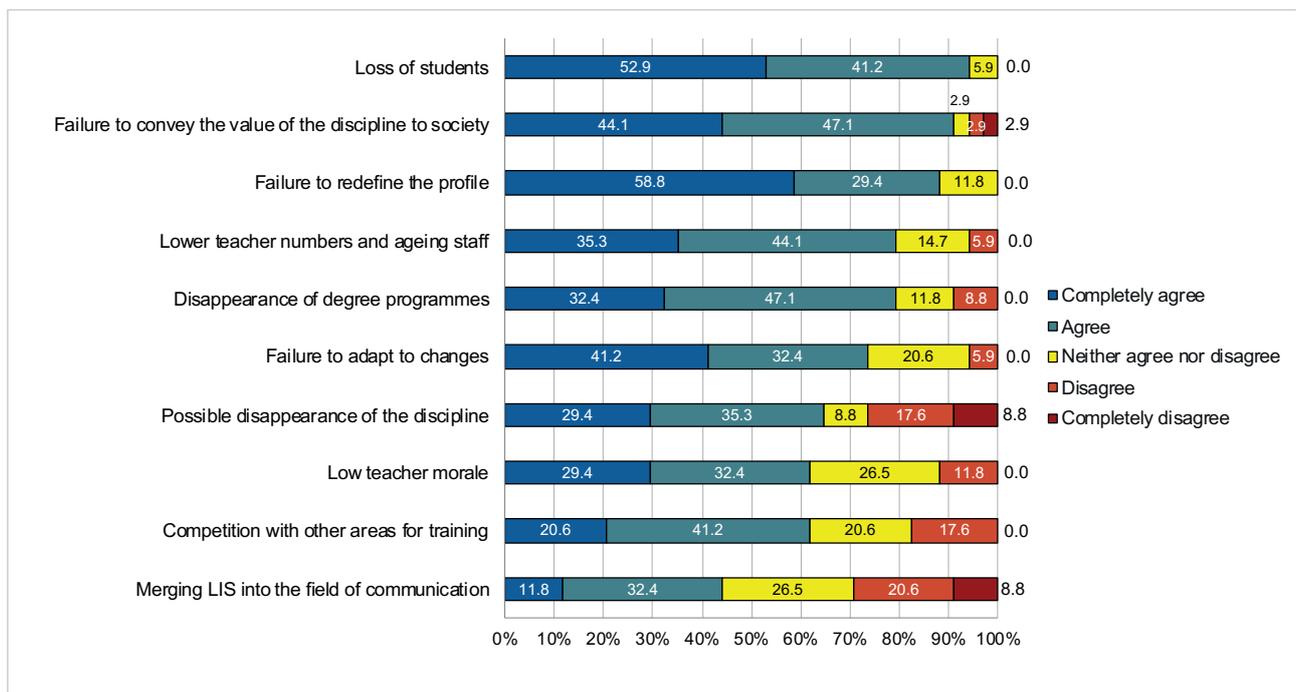


Figure 10. Threats to education in LIS

teaching staff, one interviewee mentioned the demanding assessment criteria in *Cneai* research brackets, which hinder academic promotion for the young researchers so desperately needed in this field.

“With regard to recognition of six-year terms, the main challenge is to get the promoters of the criteria for six-year research periods to understand that setting us higher requirements to successfully pass assessment than in any other discipline only generates more hurdles for young professionals starting their career. Rejecting new blood trained in our fields” (I21).

Mention was also made of the disappearance of degrees, which is sadly true, as discussed above.

Competition with other areas of training could be related to the previously mentioned opportunity for reorientation toward other subjects (digital content, digital transformation, and social media, among others), as these areas involve other disciplines that compete with LIS for visibility and attracting students, especially for master’s degrees.

Finally, there are two interrelated issues that cause controversy among the survey participants. The possible disappearance of LIS is considered a threat by over half of them. Curiously, however, if LIS were to be merged into the field of communication studies, over half the participants would not consider it a problem.

4.3.3. Priorities

Figure 11 shows the list of priorities, an issue directly related to the previously discussed threats and opportunities. What is to be done? This is the big question asked by many academics and professionals for years, producing a long list of actions provided in response.

In general in this section, there is a remarkably high degree of consensus regarding priorities, ranging from 70 to 90% agreement. These are high scores, including three priorities universally accepted, while the other three received only 3% rejection. In general, the list is similar to the proposals in **Ortiz-Repiso (2013)**.

The initial priority, supported by 90% of survey participants with no opposing opinions, is to update the content of current degree programmes to bring them more in line with society’s needs. One interviewee expressed the matter clearly:

“The best opportunity is to reinvent yourself, based on information technology and new needs, and join them” (I9).

This assessment perfectly matches the main opportunities (reorienting content to new fields) and threats (loss of students, inability to redefine the profile). As stated above, we believe this message is shared by many current centre directors, who have started moving in this direction (new degree programmes, reforming current ones).

In the field of research, emphasis is placed on opening up to European projects, a source of funding that has largely been ignored. This issue has already been noted in studies assessing the situation of LIS research in Spain (**Abadal; Guallar, 2020**).

Reaching out to new fields and thus ensuring interdisciplinary openness and expansion received 70% support from the survey participants and appears to be essential to avoiding the disappearance of LIS (a previously detected threat). In addition, collaboration with other subjects is another widely supported opportunities.

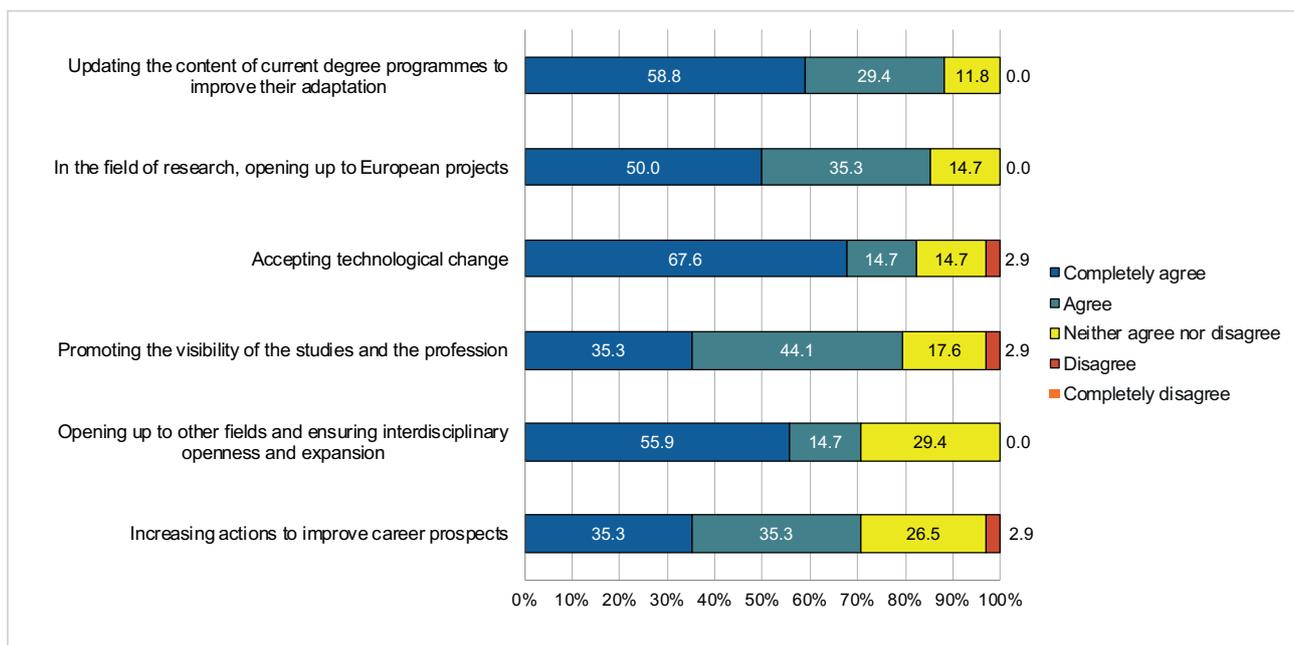


Figure 11. Priorities for LIS

Nor is there any surprise in the fact that 80% of survey participants would prioritise promoting the visibility of LIS studies and the profession. This has been a topic of discussion for years in the professional forums [such as the *Spanish Federation of Societies of Archivists, Librarians, Documentalists and Museologists (Fesabid)* and among academics (*RUID*)]. There is a broad consensus on the link between professional visibility and interest in the studies. The problem may be that there is no magic recipe available on the actions required to improve this visibility (advertising campaigns? in what media? with what messages?).

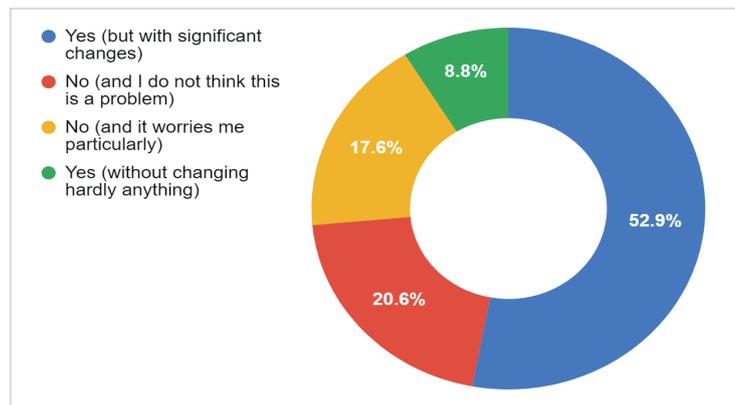


Figure 12. Do you think LIS will continue to be an independent discipline in the short or medium term?

Finally, there is a demand for more actions to improve career prospects. Although this came in last place, it still has 70% support among the survey participants. As previously mentioned, LIS programmes have notably high graduate employment levels when compared to the humanities and some social science degrees. This is highlighted above as an opportunity. However, employability levels vary significantly between autonomous communities (Madrid and Catalonia have better results in this area). This is why increasing current percentages is seen as a strength for LIS educational programmes to help them become more competitive.

The survey did not ask about responsibilities, i.e. the organisations that should lead this transformation. These are assumed to be the faculties and possibly also the *RUID*, which, interestingly, receives very few mentions.

4.3.4. Independent discipline

As shown in Figure 12, 62% of survey participants are optimistic about the future of LIS, as, despite the problems, they believe it is viable as an independent discipline. However, 53% are aware of current difficulties and think that significant changes are required to ensure this status.

There are two different schools of thought among academics who think LIS will disappear (40%): those who perceive its possible disappearance negatively and those who do not consider it a problem. The latter opinion is coherent with the perception of threats (Figure 10), where merging LIS into other disciplines was not seen as such.

The optimistic view of its disappearance is exemplified in this statement:

“Information science’s greatest triumph will be when no one talks about information science, which will occur when it is integrated into all processes, all companies, when there will no longer be a need to talk about it. This could be good for the field, but not for specialists, who want to maintain their status” (I22).

5. Conclusions

The study provides numerous opinions that help adopt a wide and detailed approach to changes in LIS studies and the discipline in general. However, the results reveal no magic solution to the current crisis, nor do they provide any surprising or unexpected opinions. Clearly, no issues, priorities or risks are raised that were not previously known. Nevertheless, in most cases the value lies in identifying diagnoses and priority actions. We consider this the study’s main contribution.

“A generation of academics has had to manage the deployment of university degrees, departments and policies with little specific training for it and, often, with a continuity and accumulation of positions”

The main conclusions taken from the survey participants’ opinions are given below:

- The participants were a generation of academics who had to manage the introduction of degree programmes, departments and university policies with little specific training and often while holding one or more management positions.
- The main challenges in such posts in LIS relate to the degree programmes, especially their creation, dissemination and sustainability, but also to teaching staff promotion and cohesion.
- Adapting to the EHEA is considered the main challenge during the period covered by the study, followed by the creation of departments and faculties, setting up research groups and the doctorate programmes.
- The main achievements in the field are the general progress in research (especially bibliometrics), followed by its influence in Latin America.
- The disappointments mentioned are loss of interest in LIS studies, failure to generate academic and professional visibility and failure to make the most of technological change to position the field in the mainstream.
- Most collaboration with LIS has been with the fields of computer science, communication studies and historiography over the 40 years, although survey participants only considered such collaboration as close in the latter field.

- With regard to the assessment of the current situation, this is seen as favourable or very favourable in research and libraries in over half the responses, while education and the profession are only considered favourable in 25% of responses.
- Asked about opportunities in the field of LIS education, the options producing most agreement are offering a new orientation to content, orientation toward new subjects and focussing on postgraduate studies. Significantly, offering three-year degrees and changing the name of the degree are supported by less than half the survey participants.
- With regard to perceived threats, three issues stand out in the responses: loss of students, failure to convey the value of the discipline to society and failure to redefine its profile. However, less than half the survey participants see merging LIS into the field of communication studies as a threat.
- The priorities producing the largest consensus are matching the content of current degree programmes more closely to needs, opening up to European projects (in terms of research) and accepting technological change.
- Finally, over 60% of participants think LIS will continue to be an independent discipline in the short and medium terms, while 40% disagree and, significantly, 20% do not consider this a problem.

“The disappointments mentioned are loss of interest in LIS studies, failure to generate academic and professional visibility and failure to make the most of technological change to position the field in the mainstream”

In qualitative terms, the drop in student numbers has fundamentally affected the mood in the discipline. Previous high numbers might not have been normal, which attenuates (and helps explain) the drop. We need to get used to a situation with a lower number of centres and students.

The interviewees also express a desire for an organised space for debate to identify problems in LIS education more accurately and propose better strategies to tackle them. There has been no such collaborative environment for reflection since the drafting of the *Libro Blanco* (Aneca, 2004). Clearly, the RUID can play a role in coordinating these strategies, although it seemingly lacks the structure, organisational muscle and external leadership to carry out actions beyond annual monitoring meetings. One possible follow-up to this study would be to establish a forum of debate to gather opinions from more experts and maintain an active commitment to relations and collaboration in the academic world.

Finally, we would like to reiterate that this research focuses exclusively on the academic point of view, but reflections and assessments from professionals would also be valuable, as they have also lived through the processes of change and the major transformations of the last 40 years and would provide a complementary perspective to this analysis.

6. Note

1. The Likert scale is commonly used in surveys, particularly in social sciences, and specifies levels of agreement or disagreement with a statement (element, item, reaction or question). This bipolar scale method measures five response levels, ranging from positive, neutral and negative, for each statement: completely disagree; disagree; neither agree nor disagree; agree; completely agree.

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Appendix. Alphabetical list of interviewees

Francisca Abad, Carmen Agustín, Ángel Borrego, Agustí Canals, Mercedes Caridad, Josep Cobarsí, Lluís Codina, Félix De-Moya, Miguel-Ángel Esteban, Eulàlia Fuentes, Vicente P. Guerrero, Evaristo Jiménez-Contreras, Pedro López-Gómez, José López-Yepes, Francisco-Javier Martínez, Carme Mayol, José-Antonio Moreiro, Manuela Moro, Purificación Moscoso, Virginia Ortiz-Repiso, Fernando Ramos, Blanca Rodríguez-Bravo, Concepción Rodríguez-Parada.

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