Educating the information professional of the 21st century: A ten-point proposal based on the Spanish context

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This paper analyses the changing environment of LIS education from a Spanish perspective and summarises some challenges that LIS educators and educational programme developers responsible for the information professional of the 21st century have to address in the near future. First, the state of the Spanish educational arena and the main trends in the LIS field are examined. Thereafter, some foci that must be urgently addressed in the educational programmes are isolated: Only by addressing changes in our curricula, by organising our disciplines in a strong theoretical corpus without sacrificing the achievements of the past and by putting the students at the centre of the educational process, will we be able to survive as educational and scientific agents in the new social information environment. These new foci are not seen as substituting previous educational emphasis in technical processes and technology, but as complementing them.

1. Introduction

In this paper we will try to summarise some challenges we feel we need to address as teachers and educational programme developers responsible for the information professional of the 21st century. They are mainly the result of our personal experience, our understanding of the Spanish educational context and our exposure to the projects of some colleges of Spain and Latin America. It is not our intention to provide a finite and ended research work, but to share some problems we consider important and that, in our modest opinion, are not properly treated in the current Spanish curricula.

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2. The Spanish educational context

The history of university education in the library and information science in Spain is relatively short. For many years the education in this field was exclusively connected with the specialised departments of the Spanish Administration in charge of the national heritage.

During the first years of the 20th century Catalonia was the first country in Spain to adopt the new concept of public library as a key point of their cultural policy. The deputations of the four Catalonian provinces created a school in Barcelona in 1915 to prepare the new professionals, who were to be only women. At the same time the republican government were carrying out a big program to develop a network of popular libraries in the whole country. These efforts were destroyed by the civil war, though the Catalonian school continued.

After the war, the Spanish National Council for Research (Consejo Superior de Investigaciones Científicas, CSIC) created a program in Madrid very similar to the Barcelona one. This program survived till 1973. Some years later the CSIC organised a centre of information and documentation (CINDOC). The model of the Catalonians was also assumed by the Universidad de Navarra, which created a women-only school. The initiative was kept alive from 1967 to 1977.

With the arrival of the Spanish democracy, the new governments began a process of reforming the university legislation. This legislation opened the door to new studies in a scene dominated by the old classical disciplines. The legal frame to create pre-graduate studies of library and information science at a university level was finally established in 1978. As a result, the school of Barcelona was ascribed to the University of Barcelona in 1982 and a year later a new university school was opened in Granada. Now at least fourteen schools exist. In the eighties, the legislation created also the opportunity for the universities to develop postgraduate studies (diplomas and masters), though these programs lacked a national recognition. The official acknowledgement of the postgraduate cycle in LIS came in 1992 with the creation of a title of “Licenciado en Documentación”. In 1994 the Licenciatura was for the first time implemented in the Universidad Carlos III de Madrid. Now at least nine universities offer these studies. As a result of the establishing of the new curriculum cycle many schools could grow into Faculties, and a number of programs at a doctoral level appeared.

The first approved curricula were very oriented towards the Humanities – with a lot of teaching time devoted to classical disciplines like Bibliography, Diplomatic, Palaeography, etc. In the subsequent years, the need to adopt the new information technologies occupied the centre of the stage. Now it seems to be the time of management.

This general trend occurred in the context of the national reform of the university curricula, based on a decree of 1987. The legal frame for the LIS studies was developed from this text in 1991. This decree established the core modules to be taught with its minimum duration in credits:
– Cataloguing, subject analysis and indexing languages (20 cr.)
– Archival Science (10 cr.)
– Bibliography and information sources (10 cr.)
– Library Science (10 cr.)
– Documentation (10 cr.)
– Diplomatic, Numismatic and Palaeography (6 cr.)
– Information Technologies (15 cr.)
– Practical work in a professional centre (10 cr.).

Within this frame, each university was free to organise these core modules in different subjects, increment the class time devoted to each of them and offer their own optional subjects. This created a frame for the diversification and specialisation of the studies in Spain; a thing that was not possible within the previous rigid legal context.

The different Spanish Universities began a process of redesigning their curriculum in the context of the new legislation and also as a practical consequence of the need to co-ordinate the pre-graduate studies with the newly approved post-graduate and doctoral ones. Some universities opted for a main and single curriculum, like the Universidad Carlos III de Madrid, while other universities tried to establish specialisations like the Universidad Complutense de Madrid, with a course in Archival Science and another in Documentation.

Recently, the government tried to solve some problems produced by the former decree, and in 1998 a new one established that the students would not have more than six compulsory or optional subjects at the same time and that a number of credits of each subject could be reserved for tutored personal work. The idea was to diminish the whole amount of theoretical and practical lectures that a student has to attend to. This has provoked a new curriculum reform, which is being carried at the moment.

3. The ten points proposal

This frame of permanent curriculum reform that has characterised the Spanish University in the last decade has been very useful for reflecting on our professional practice as teachers and also on our educational aims. We, in Spain, are in a transition from an educational model based on the transmission of knowledge through lectures to a new model based on the constructivist approach. This theoretical perspective understands education as the creation of new meanings and abilities by the student, and emphasises the role of the teacher to be a mediator and facilitator.

Our ten points proposal tries to gain a better understanding of the current context of the information professional and assumes that our teaching aims and procedures have to be modified to help the students to become integrated into the new professional environment. The LIS education in the eighties has been very oriented to towards the preparation of professionals for technical procedures in institutional centres. In the
nineties, this approach has been completed with a strong emphasis on information technologies. But now we have to shift to gain a better understanding of the information environment and prepare our students to work with people and communities and also among them in a context of strong competition and professional mobility.

The ten points in which our reflections have clustered are summarised in Table 1. We will review them in the next pages, dividing them, as Table 1, in two parts:

1. First, we will consider the global problem, examining the state of the LIS field as an agent in the information revolution, hypothesising about where we should concentrate our efforts, and seeing how these analyses put light on the problem of curriculum development.
2. Thereafter, we isolate some foci that must be urgently addressed in the educational programmes. We do not see them as substituting the previous emphases, but as completing them.

### 4. Rethinking the curriculum to recover focus

In these last few years we have seen a great revolution in the field of library science. This process is due superficially to technological changes, but there are also some subjacent more importantly and in particular social changes.

Let us consider those social changes. It has been said that the 20th century has been the ‘age of information’. This expression meant at first the ‘age of mass communication’. But thereafter, the advent and triumph of computers and telecommunications

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Table 1

The ten points proposal

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has changed the sense of this term and absorbed it in a wider sense. The years of the millennium change are being characterised by the confluence of the mass communication devices and the tele-computing networks. The result is global and integrated technological, economic and social platforms, whose political implications are not less important.

On the other hand, we have our field of study, an old profession, with very conservative values. Library science has been tied during the ages to this venerable and still useful old asynchronous communication technology: the sheet and the book. It was and it is quite a friendly technology and alphabetisation did a great work in spreading it to all the social body.

On behalf of LIS, we have to say that librarians and archivists have been rather successful in adapting to the new situation. The age of information has brought new technologies that have been painfully – but successfully – integrated by librarians and archivists: first films and videos, thereafter, multimedia and computer files, finally URLs [1].

But as the information society consolidated, society felt the need for new professions related with information retrieval and dissemination. This inevitably put a threat on the old ones. Let us see the main changes that are leading to this new situation:

1. Information overload reached organisations, which felt the need for information managers.
2. The gap between publishing and disseminating information melts in the new Internet and web-based communication environment. Producing knowledge and distributing it comes nearer in the communication chain. As a result, their respective professionals see their frontiers dissolve.
3. Organisational gurus perceived the link among creating, storing and distributing information in a new way. For them knowledge management appears as the link among the directive staff, the archive and library and documentation centre and the human resources division – mainly the permanent education department –.

So many changes are too many in a so a short time even for one of the older – at least as a part time job – and civilised professions of librarian and archivist. From our current perspective, the debate between librarians and documentalists – which was so acid in the eighties – seems nowadays as dated as the quarrel between the classics and the moderns in the fourteenth century.

The debate between documentation and library science originated in the same social and technological changes that challenged the old and wise way of doing things. But the problem now has grown bigger. The field of information professions has grown enormously, but many persons want to plant their tents in this new field, sometimes better qualified because of their technological knowledge or their specific curriculum in a discipline. As information and knowledge move towards the central stage of the scenario, every job-hunter and professional lobby want to catch the eye of the camera [2].
Theoretically, documentation professionals – we mean librarians and archivists – are qualified for these emergent professions: they understand the requirements and have the basic intellectual and technical tools.

But we can see at least two problems when generalising this approach in the educational arena.

As we will see in the next topic, information and documentation education covers too wide a spectrum of subjects and disciplines, too wide for the normal student to become better in most of these areas than any of the respective other professionals.

We can say he is better because the LIS professional has an open and wide view of the information problem and can direct an interdisciplinary task force of the necessary professionals. But, in fact, this requires a social division of work that does not seem very consolidated.

Here comes the other problem: information and documentation science does not cover the complete information problem arena. Our professionals are “documentalists”: they work with knowledge records, with messages stored in documents. They are not trained for “communication”, as editors, journalists and public relation professionals are.

So, the task of developing a strategic analysis to identify the core and adjacent educational contents remains:

1. Which are the distinct activities, abilities and attitudes of the information professional in an environment of professional overlapping?
2. Which are our main professional niches?

We will try to provide with some answers in the subsequent analysis of curricula that occupies the next chapter. As professions that require a higher education degree have a correlation in the educational organisation, we can expect to infer something about LIS main professional niches analysing that which is only taught on LIS programmes.

LIS has become today a difficult field of study where we have to teach about a great number of subjects. We have tried to organise them in a first draft model:

1) Core knowledge
   a) Internal knowledge (mainly coming from Information and Documentation):
      i) Models, processes and techniques to process information: information mapping, acquisition, cataloguing, dissemination, etc.
      ii) Information services: How can we organise social units that solve the information needs of the users? Which kinds of such units exist? Which are their similarities, differences and relations?
   b) External knowledge (mainly coming from other disciplines):
      i) Information and knowledge basics: What is information and knowledge? Which is its social role? How we communicate? Which is the history of social information and documentation? Etc.
ii) Management and administration: How to manage the human, informational, financial and physical resources of such services of information?

iii) Information technologies.

2) Complementary knowledge:

a) Languages

i) Foreign languages

ii) Communication abilities in their own language

b) Discipline oriented knowledge: necessary to work in a subject-oriented information service (e.g., chemical information, legal information, administrative information, etc.).

In this model we distinguish first between core and complementary knowledge. We adopt an empirical point of view; that is, we demarcate between contents that are taught in most of the LIS curricula and those that students have gained or are expected to gain outside the programme, perhaps throughout practical work in a future work position.

Thereafter, we differentiate in the ‘core knowledge’ category between the contents that come specifically from the LIS field – namely, internal knowledge – and those arriving from other scientific disciplines.

We find this distinction very important because of a practical reason. This question is related to the debate about that must be the background of the teachers that instruct on such subjects.

It is very common to see knowledge from other disciplines imparted by teachers with a LIS background. This has an advantage – such teachers can adapt such knowledge to the LIS practice and provide students with LIS examples – and a disadvantage – they are not experts in this subject and therefore it is possible they have obsolete or incomplete knowledge of it –.

There are, of course, some possible solutions for the provision of education. One is the teacher being an expert in both fields. Another is having such subjects imparted by a two person of team: one from the LIS field and other from the specific scientific area.

We have summarised our first model in Fig. 1. After our visual representation was ended, we realised that the model expressed in Fig. 1 was too linear and somewhat incongruent because we were using two different criteria to classify the required knowledge. So, it seemed clear that a matrix should better represent it and we did it in Table 2.

The first criterion of classification is the internality or externality of the knowledge from the field of Library and Information Science. As we have stated before, that means asking whether such knowledge pertains or not to the scientific field of Library and Information Science.
This question is not only of an educational importance. It is also relevant to research projects developed by academics of our field. As our field of study is very cross disciplinary, it is possible that a researcher doing practical research in LIS may be doing his theoretical work in an other scientific field, such as theory
of communication, knowledge transfer, human resources, etc. The problem is that, in order to consolidate a professional field and carry on proper teaching activities, we must stress the theories, principles, methodologies, techniques and examples that pertains to our field and not to the sciences that help our work. Interdisciplinary research is very important and academical freedom too, but there is a real risk in deserting research work in the core LIS field.

The second criterion that organises the matrix is the distinction between compulsory and optional knowledge. The concept of optional subjects is an old one, and the main purpose of it is to provide the students with optional formative roads that will lead to different labour positions. Specialisation is getting increasingly important in the present work market. Many special library activities like acquisition and cataloguing are now difficult and complex specialities, and the same occurs with the subject and discipline oriented fields. The number of field specialisations is so great that some kind of formative labour division at national or international level is needed. No school is able to supply so many options to their students, so networking an educational work division gets increasingly important.

5. Educating from and for theorising

One of the most important things in formal education and scientific development is to reach a model that abstracts the main elements of the field of study. This model will be used as a permanent reference when explaining the entities and events of the real world and when trying to modify it.

Models are the heart of disciplines and require three elements:

1. Its research domain (field of study).
2. Its modelling of it, taking account of differences throughout typologies, and . . .
3. The methods and techniques it uses to carry on research and intervention on this domain, that is, to pursue new knowledge and to change reality in this field.

Our point of view is that we lack a strong theoretical model in the library, archival and information field. One may argue that some general models are available – like the information chain –. But we have to take also into account that this is not a finalised and coherent model and that it shows many fractures when we try to apply it to specific library, archival and information services and activities.

The situation has been aggravated by the arrival of telematic information services and the digitised version or the traditional ones. We need a general model and a serious typology derived from it, explaining strongly the differences and similarities. When communicating theory to our students, we are many times teaching from the point of view of paper-oriented documentation models.

As a conclusion, we consider a priority the creation of the new global models, a typology of the different services and the subsequent special models. Such models
should be prospective; that is, they must consider the movement toward digital and networked information environments.

In any case, the theoretical effort is a necessity for LIS teachers and researchers who aspire to excellence. As Mario Barité [3] expresses finely: “Beyond the more or less exhaustive inventory of the ideal qualities that a teacher in this field must have, we think to be essential assuming that, on one hand, a new attitude towards the learning/teaching process in our disciplines is required, and, on the other, a consciousness that our teaching work must be framed in a due line of thinking – that will allow the elaboration a organic, consolidated and coherent vision of the knowledge transference – is needed.”

6. Educating for synthesis and project development

But global models and theories must have a correlation in practical activities and in the way we teach. Otherwise they will be wisely declared redundant and a loss of energy and effort.

We find two teaching approaches quite useful to reach this aim:

1. The first one is including in the curricula subjects oriented towards project development that have continuity along the various terms. The students choose an area of research after their introductory term in the frame of a project-oriented subject and develop a project in a group during the remainder of the university programme [4]. We have seen this experienced in the Campus of Marilia (Sao Paulo, Brazil), thanks to an invitation of Prof. Dr. José Augusto Chaves, Gimarães and we have appreciated personally the satisfaction it produces in the students and the excellent formative results it reaches. The students have to co-operate with other ones under the direction of a group of teachers for a prolonged period of time. This experience contributes to a large extent to their self-confidence as professionals and to the development of abilities that are not usually taught in the classical teacher-student interaction in term periods.

2. A second one is establishing the requisite of a final project in the last term of the studies, where students can gain a real contact with the work environment and integrate the knowledge and know-how they have acquired throughout the different subjects studied in the university programme. This is the approach found in the Information and Documentation Studies of the Fachhochschule Hannover, Germany.

Using these methods, students are able to overcome the traditional frontiers among the different subjects of the curriculum and learn to integrate models and activities, gaining self-confidence in their abilities.
7. Educating for change and globalisation

Project oriented subjects provide a great flexibility to adapt curriculum to an unavoidable fact of our times: permanent change. Change is especially important in the LIS field because, as we considered at the beginning of this paper, information revolution is one of the pivots of current transformations.

It is obvious that preparing for change requires going to the principles, learning to learn and emphasising the importance of permanent education.

In this context, open education, with telecommunication as its infrastructure, appears as one of the main educational frontiers of the near future. Open telematic education facilitates the provides of obvious social benefits as education can be provided to those in peripheral areas and those with special needs. Wisely combined with classroom education, distance education can help to build new consortia of universities, using parts of the present universities to create virtual and global ones. These virtual universities will be able to launch education programmes, research institutes and a wide range of specialised activities that current universities cannot carry on because of the limited available market and staff they have.

This last argument connects our reflections with the other main trend of the ending millennium, that is, globalisation. It is clear that, in the context of the global village, information and documentation professionals with a culture-oriented background will be needed to help in the progressively opened economy, and that the importance of international programmes of study will only grow.

8. Educating both for personal and social counselling and intervention

Although things are changing quickly, the traditional approach in LIS is mainly user-oriented, that is, assisting the needs of individuals. This is also the most frequent theoretical approach in LIS education.

The experience of information management in organisations and community-oriented information services suggests to us as educators that we have to overcome the individual user-oriented model and complete it with other levels of analysis: groups, institutions, etc. Users are not isolated entities but part of multilevel and complex systems that explains to a great extent their information needs. The information and documentation work can be conceptualised as a process of intervention on social systems to optimise the informational flows, and LIS as an applied social science that pursues this aim.

9. Educating for personal relations

Traditional library, archival and information training has been too centred in technical tasks. But the fact is that much work in the information field is concerned with personal relations and community, organisational and group work.
If we accept that information work is a user-oriented one we have to include in our curricula and in the practical development of our training, personal, group and public relations concepts, attitudes and techniques, and these subjects are rarely found in LIS training programmes.

10. Educating for new work relations

For many years, the library world has been inspired by the factory model. The library is both a system that provide with products – mainly related to their catalogues and holding reproduction – and services, that is properly departmentalised and that has a rigid set of staff levels.

Today the whole services sector – and also the industrial world – is looking for new organisational structures, more flattened and adaptive, which rely on a more educated work force and the intensive use of computers, networks and new technologies. These processes are irreversibly impacting the organisation of the library and information unit [5]. At least in Spain, the educational system has yet to respond to such a challenge.

11. Educating for an information-rich society

For many centuries and still in many places, library, archive and information work has mainly been fighting against the problem of information loss and scarcity. The situation at the end of this century is precisely the contrary: the main problem of our modern world is information overload. There is also a very dynamic process of creation and distribution of information, with many actors and much competence amongst them. (The problem of information loss remains also important; but as knowledge reverberates so much in multiple copies and versions, it does not seem so urgent as information overload.)

Information overflow creates a great opportunity for intermediary functions and professional development in our field. But it challenges the main emphasis in preservation and collection development in which most of the library and information sciences where built on. Information centres become information observatories with their information antennas completely opened to the global world. They have also to compete among them by marketing their services and offering content in a more developed way.

12. Educating for self-confidence and self-learning

Knowledge – his creation, organisation and dissemination – is considered the main social activity in the post-industrial world.
The implications for the LIS world are less topical. Because it means that we face a strong competition from other sectors interested in satisfying the social function we are aiming to fulfil.

Only by addressing changes in our curricula, by organising our disciplines in a strong theoretical corpus without sacrificing the achievements of the past and by putting the students at the centre of the educational process, will we be able to survive as educational and scientific agents in the new social information environment.

Self-confidence and self-learning seem a necessary condition for our students’ success as professionals and more is needed in times of change and insecurity. Our experience shows us that the traditional class interaction does not produce in the students the true feeling of competency they need to address in a work market dominated by competence, undefined tasks and continuous changes in the aims, methodologies and tools.

13. Conclusion

Some of the programmatic points we have reviewed can help in giving the students a deeper feeling of self-confidence. But this cannot be either improvised nor pretended and must be based on a clear understanding of our information environment, of our focus and mission, of our specific aims and programme of intervention and of the tools we have to carry it. Only when we have it clear enough, will we be able to teach it.

References