Abstract:

The Department of Information Sciences at the University of Zadar has recently submitted its new program for accreditation, at two university levels – the undergraduate and the graduate. These programs were designed according to the needs of the LAM community. Together with the existing PhD program, these programs approached educational issues from a twofold perspective: firstly, the authors intended to offer new content, knowledge and skills, as represented by a number of optional and elective courses and workshops that could answer the needs of the LAM sector in both Croatia and the region; and secondly, the authors were aware of the fact that the educational programs for the LAM sector, that sometimes tend to be atomized and situated in different academic surroundings, should be managed in a different way.

Special attention in this paper will be paid to issues concerning the digitalization of cultural heritage. Different models for the collection and presentation, preservation and use of digital assets have been designed; all based upon a multilayered concept of the communication of cultural memory as a complex phenomenon that foresees the synergies between library, archival and museum (LAM) studies and the ITC, and several of them form a part of the courses in the curricula.

This paper will also focus on convergence issues as a basis for the understanding of the relationship between several LAM and other disciplines such as communication, semantics, cognitive sciences etc, as well as the theoretical boundaries of the information sciences in relation to the disciplinary traditions of archival, library and museology studies; this will shed light on the unifying principles of information disciplines and fields of practice that could provide a new framework for disciplinary theory, as well as on the barriers that sometimes affect the planning process. Also included will be a discussion on interdisciplinary issues (as something to be desired) as these can lead towards a new paradigm of ISs in a digital society, as well as how these might influence their overall identity.

Keywords: LAM – education; LAM – Convergence; Department of Information Sciences, Zadar – new programs.
Introduction

In recent years, Library and Information Science (LIS) and Information Science (IS) schools worldwide have been involved in the development of a certain curricular which offers pathways and certificates that should prepare students for work in a digital environment. Some of these schools focus on ‘digital libraries’, ‘digital humanities’, ‘the management of heritage institutions’, ‘digital curation’, ‘data curation’, etc. Yet it remains difficult to investigate the extent to which these new programs are able to answer the needs of a changing environment in the libraries, archives and museum (LAM) sector.

Useful research has been presented by a joint effort of the editors of the *Library Quarterly, Archival Science*, and *Museum Management and Curatorship* when they agreed to publish three special issues (one for each journal) exploring the shared information needs and challenges facing libraries, archives, and museums in the information age. It was clear that the LAM sector required more information in order to shed light on the overlapping educational goals of library and information sciences, archival studies, and museum studies programs (Cf. Marty, 2008; p. 247). From the perspective of tertiary education, this is a very challenging era, and what is required is a new approach to the design of curricula and the management of educational programs.

Croatian professionals and academics from the LAM sector began discussions on a joint venture within a global environment at a relatively early date (Willer, 1998). They approached this venture from two perspectives:

a) from a perspective of everyday needs, to increase the quality of services, to modernise working methods and management practice, and to co-ordinate activities towards rationalisation of financial resources;

b) from a the perspective of the redesign of existing educational programs, to ensure that heritage studies approximate and equate their requirements to those studies in similar academic fields.

Until recently, according to traditions in Croatia and other European countries, archival studies were situated in departments of history, whereas museology was taught in departments of the history of art, for example. At the same time, library science education was offered as a separate programme at separate and independent departments. As an academic discipline, Information Sciences began in Croatia and other countries of the ex-Yugoslavia in the early 1960's, with a formal postgraduate educational program at the University of Zagreb for information professionals in various fields; in science and medicine in particular. (Pehar, Aparac-Jelušić, 2012). Later in the decade, a postgraduate program in documentation, library science and museology was established at the Referral Centre of the University of Zagreb, and the first graduate program in Croatia began in 1976, when full and part-time students of library science enrolled at the Faculty of Philosophy of the University of Zagreb (Horvat, 2000).

Several years later, at the same Faculty the Chair of Library Studies and the Chair of Social and Humanities Informatics merged and became the Department of Information Sciences, at first offering students a number of academic courses in library science and informatics, and later, courses in archival science and museology.

There are three departments of information sciences currently in Croatia at the university level (Zagreb, Osijek and Zadar); one program is offered by the Department of Croatian language
and Literature at the University of Rijeka, and one, as a segment of Cultural Studies, at the University of Osijek.

The initiative to conceive a new programme emerged at the Department of Information Sciences (formerly Department of Librarianship) at the University of Zadar. The approved program in 2005 was in library science, since the market for jobs in Dalmatia was in need of library professionals with high level diplomas.

The underlying reasons for a thorough reconstruction of the existing programme in 2013 were twofold:

a) considering that this programme was designed and accredited at a time when the Department was lacking in teaching staff, the accredited program was oriented towards library science only. This programme was modified almost every academic year, as staff numbers had increased (from 2 positions in 2004, to 16 in 2013, with 11 staff members with a scientific degree). After a process of a self-evaluation and a consideration of the pros and cons of the programme, modifications were made in accordance with the endorsed changes and the approval of the University’s Senate.

b) taking into account the opportunities for staff training in the field of information sciences, and seeing that they are expected to function in an unpredictable environment in information and heritage institutions, as well as to encounter new forms of communication and the provision of information services online, it was concluded that the programme should be thoroughly updated in order to master the knowledge and skills of future professionals in the LAM sector that will contribute to the social and economic development at both the local and national levels, and to acquire a modern educational foundation to further their studies in the field of social sciences and the humanities, particularly in the field of the information sciences. (Aparac, 1998).

This issue of the education of LAM information professionals at the university level has already been dealt with in a number of countries worldwide. Bearing in mind the current process of globalization and advances in technology (IT, Web), developments in the education of LAM information professionals had to be considered in the light of their adherence to principles; these include the international or global scope of curricula, the creation of value added information, the mastery of new information skills, and the application/implementation of a broad-based approach, which will enable graduates to work in a variety of information environments. (Cf. Horvat, 2004).

Theoretical background

Convergence issues as a basis for the understanding of the relationship between several LAM and other disciplines, such as communication, semantics, cognitive sciences etc, provoked a number of discussions (during LAM conferences in Croatia, per example). An agreed point of departure was that the theoretical boundaries of the information sciences, when viewed in relation to the disciplinary tradition of archival, library and museology studies (which form a part of both historical and contemporary traditions) will be better understood if the unifying principles of information disciplines and fields of practice are seen as an advantage. They might provide a new framework for a disciplinary theory. Accepting such an approach should make it possible to recognize the barriers that sometimes affect the planning process for cooperation in various fields, including aspects of education.

A discussion on interdisciplinary issues as desirable and as something that can lead towards a new paradigm of ISs in digital society, and how these attempts might influence disciplinary identity is another way of looking at convergence problems. Discussions on the convergence of disciplines within the wider field of information sciences gained greater prominence in the 1980’s. What had surrounded these discussions was a society of global communication and information in which “individual disciplines began to
take a greater interest in more general questions, albeit interpreting these questions from the perspective of their own fields of interest, yet also expecting that, should this permeation prove effective, they would be able to strengthen their scientific foundation and affirm their place in the family of sciences” (Aparac, 1998). Seen from the perspective of LAM, their field of research consisted of a myriad of diverse activities by which certain relations were reflected, also taking into account the totality of knowledge at any given moment, as J. Nitecki (1968) would say. Should we use his interpretation of library science as an example, we could also prove that the reality of LAM occurs at three different levels: at the procedural (empirical), contextual and conceptual level.

Rayward (1998), on the other hand, examined early on how changes from physical to digital media affect the traditional distinctions between information organizations and thus introduced the term 'digital convergence'.

As noted by Marty (2008), the common features of libraries, archives, and museums have also served as a theme for several different conferences, including RLG 2005 and RBMS 2006. More recently, OCLC has published a study (Zorich et al. 2008) that inspired several authors to continue working on theory. Trant (2009) offered some interesting insights concerning emerging convergence issues and Zorich (2008) pointed out that „the endpoint of the collaboration continuum is convergence, a state in which collaboration around a specific function or idea has become so extensive, engrained and assumed that it is no longer recognized by others as a collaborative undertaking.”

In my opinion, it is possible to propose the central thesis of the discussion concerning the nature of the activities under research and the need to found a plausible theory on a conceptual level in which the library, archival and museum disciplines can be considered in the sense of the constant permeation of the metaphorical relationship between the given and newly attained dimensions of knowledge. In order for this to succeed, the role of both professional and academic institutions, which are responsible for the activities just cited, must be based on the effective dissemination of knowledge and this can be achieved by a reliance on the two following aims which ultimately derive from their inherent value: the first aim, without a doubt, is to assist users in discovering concepts which appear to be new to them, unknown and unrecognised until now; and the second is to ensure the necessary sources required to understand those concepts which were discovered earlier, yet have not been fully understood. Since one of the themes of debate in recent years concerns disciplinary convergence within the field of information sciences, two approaches have come to the fore:

- On one level, leading theoreticians and experts in particular disciplines attempt to seek out the best solutions for similar, general problems, despite the fact that they begin their work with different goals and develop a different terminological ‘apparatus’; basically, their approach is based upon an understanding that the disciplines inside a wider IS and communication science should develop closer connections.

- On another level, more attention is given towards ICT as a strong connective element for the design and offer of modern information products and services, the purposeful connection of different information activities, quality bibliographic control and the insurance of the availability of information resources at global/local levels. (Cf. Aparac-Jelušić, 2009).

In a context such as this, it is certainly necessary to recognise, select and interpret what may be the general principles, so that certain authors have asked if they exist, and also whether it is possible to recognise the general principles which should lead to a better understanding of the principles of the field of information sciences.

A digital environment has, without a doubt, led certain institutions to implement new library services which aid the user in receiving a more complete, correct and professional
answer to what he or she might ask. Unique and coherent access to various digital products and services has certainly led to a professional curiosity among practitioners and academics in LAM sector and has also emphasised the fact that without the proper awareness of the strident changes in such an environment one cannot be encouraged to find one’s ‘own’ place in the changing conditions of contemporary life.

T. Šola (1990) stated that information studies – which in his opinion include museology, archival and library studies, all tend toward the same – to study information that reflect past human experience, its creation and acquisition in any given format, organization and analysis, preservation and dissemination – and it is because of this that they must all be based on the same theoretical framework. He proposed later a new discipline – heritology, mnemosophy in fact, which has the phenomenon of a total heritage at its centre and also attempts to unify the knowledge and methods of which the foundations of the scientific interpretation of the processes of the organisation, curation and utilisation of heritage consist. This would bring together various related disciplines (some of which have been mentioned above) under one collective roof. (Cf. Šola, 2002).

Despite the relatively long tradition and the annually held LAM conferences (established in 1997) in Croatia, systematic investigations are still lacking on the ways in which these three professions are interconnected and influence one another. One such investigation was carried out by Aparac-Jelušić, Faletar Tanacković and Pehar (2010) based on a corpus of works of the LAM conferences proceedings (from 1997 till 2007), during which a surprisingly high degree of professional cooperation was maintained. Following suggested sources of data that could be used to determine the extent to which two (or more) fields are converging (such as research questions in common, theorists shared, citation links and overlapping membership in professional organizations (Borgman, Schement, 1990) they could prove cooperation in organizing conferences and working together on joint professional projects, but not support the elements that would lead toward a more successful method of citation between sectors and a research project consensus between the authors from three different disciplines.

Convergence and educational programs
Why is convergence an important issue in the process of designing academic programs? In my opinion the reasons are twofold:

– firstly, although earlier (bibliometric) research did not show much interest in the notion of convergence in the field of information sciences, some cross-disciplinary journal citation patterns were found out (per example, Borgman and Rice, 1992; Pehar, 2012; Aparac-Jelušić, Faletar Tanacković and Pehar, 2010);

– secondly, investigation of Borgman and Schement (1990) into some of the likely common theoretical grounds for information (and communication) sciences have shown that a small corpus of theoretical literature exists; other authors suggested that there are different approaches for the design and performance of academic education in the wider field (Cf. Tibbo and Lee, 2010).

These results are not only useful as indicators of scientific communication patterns when considering interdisciplinary problems or possible new research topics, such as the organization of information or collection management and digital services. Yet they are solid ground for the design of academic programs, as Tibbo and Lee (2010) indicated, because of the growing interest in, and actuality of, LAM convergence, so that there is a pressing need for the educators of LAM professionals to consider the implications of this new reality for changes in educational requirements and programs.
There are even more disciplines bordering with the LAM sector (such as media theory, human and human-computer theory as well as the theory of communication) that, in a digital environment, are opening new vantages and collaborative projects which will be able to investigate the closer ties in the education of professionals from all three institutions, as well as those from communication institutions and agencies within schools of information. Together they could contribute to a dynamic integration of traditions and to the enhancement of professional training as currently offered for each of the separate disciplines. Nevertheless, ‘coordinated’ should not mean ‘identical”; because distinct user models for many of the differences that fostered these institutions remain in the networked world (Cf. Trant, 2009).

For our approach to convergence issues in program design, the study of Borgman and Schement (1990) served as an intellectual challenge due to its clear distinction between different convergence models: the model of paradigmatic shift, the model of disciplinary crossing, the model of fields overlapping, and the model of common theory.

The authors noted that there is certainly not a great number of convergence based articles and data about the convergence between two disciplines they observed, at least in relation to co-citations. This is also obvious nowadays in regards to the LAM sector. Professional literature is growing, many projects are being presented, but we are lacking co-citations between disciplines and theoretical considerations based on common ground. Nevertheless, almost every academic department in LIS is considering not only merge with other departments (often as a result of the university’s policy and rationalisation rather than a more natural closeness), but a redesign of existing programs to accommodate higher number of common themes that will offer knowledge and skills useful for students who might find their jobs in any of the information/heritage institution. Such an approach tents to be directed towards:

- traditional themes and topics connected to "memory institutions “when researchers seek out the best solutions for problems raised out of daily performances inside libraries, museums, archives, information and documentation centres
- themes and topics not related to a particular institution, but to problems which ultimately derive from the intention to assure a better access to knowledge and information, which also focuses on the notion of "information needs", "information demands", as well as on the possibilities of cooperating within a network environment
- theoretical phenomena with the separation and interpretation of basic phenomena as its goal, as well as the search for common principles and the origins of information, mostly provoked by the requirements of an academic community where PhD programs are allowed and scientific grades in information sciences have been established - the status of this young academic field has to be measured by commonly accepted academic norms
- the technological trend towards globalization that has to be investigated on three basic levels of functioning institutions, because traditionally established concepts and procedures are not functioning any more: conceptual, operational and technical.

**New curricula at the University of Zadar**

It is often claimed that the future of the information profession depends on the ability of cultural heritage information professionals to transcend the traditional boundaries between libraries, archives, and museums in order to meet information needs in the digital age. (Cf. Marty, 2012). Educational institutions have increasingly stepped up to this challenge and the Department of information sciences in Zadar is no exception.
The Department of Information Sciences at the University of Zadar has recently submitted a new program at two university levels for the accreditation process – the undergraduate and the graduate. These programs were designed according to the needs of the LAM community. Together with the existing PhD program, these programs approached educational issues from a twofold perspective:

– firstly, the authors intended to offer new content, knowledge and skills represented by a number of optional and elective courses and workshops that could answer the needs of the LAM sector in Croatia and the region

– secondly, the authors were also aware of the fact that educational programs for the LAM sector, that sometimes tend to be atomized and situated in different academic surroundings, should be managed in a different way.

Special attention in the new program was given to issues of the digitization of cultural heritage. Different courses covering collecting and presenting, as well as for preserving and using digital assets have been designed upon a multilayered concept of the communication of cultural memory as a complex phenomenon that foresees the synergies between library, archival and museum studies and ITC, and several of them form a part of the courses in the curricula.

In an attempt to face the challenges of academic education in a new era, we considered the necessary changes at several different levels: at the organizational, structural, conceptual and methodical level.

Organizational changes depend mostly upon a Department's policy and the University's strategic goals. Structural changes should certainly have an effect on the quality of education as closer ties to other departments should ensure that the same academic course has not already been offered by them (some examples are Introduction to Logic, Introduction to Cognitive Science, Research Methodology, Introduction to Museology, Introduction to Archival Studies that are currently offered at least by two departments) as well as providing the opportunity for teaching staff to concentrate on the core subjects of the information sciences.

Structural changes are also tied to the study level, which was in accordance to the demands of financing bodies that the same educational program must not be offered at the graduate level if it does not exist at the undergraduate level. This proved to be an encumbrance for our teaching staff for teaching hours increased more than expected. It was also difficult for students to attain the habits required for study in an academic environment, as they were lacking the skills for critical and analytical thinking, computer and information literacy and problem solving as a consequence of the secondary schools organization. Introductory workshops, and a consideration of the first year of study as a year in which the student will learn to adapt to a new environment, will certainly prove advantageous; and this applies to all the social sciences and particular subjects in the humanities and technical sciences (stronger foundations in general knowledge, mathematics, statistics etc.)

Conceptual changes were also in the focus of our interests, for two reasons in particular: firstly, because we have on the basis of our research (Aparac-Jelušić, Dragija Ivanović, Faletar and Pehar, 2005) gained greater insight into what we would like and what we need to change in order to create a flexible and attractive program which will ensure the competence required to work in the shifting environment of the heritage sector; and secondly, we were independent when preparing and making the decisions at this level. The challenges of convergence for the heritage sector were our guiding light when we discussed the content of the core subjects of the wider field of information sciences. We also attempted to conceive the needs of individual professions active in a small country with a rich cultural heritage to be
able to design a flexible program that would accommodate knowledge and skills necessary to future LAM professionals.

A theoretical base was founded on the achievements of single disciplines’ theories – LAM, IS and the closeness of research topics and themes, and our methodology was extracted from approaches and methods of collaborative projects.

- In the process of remodelling the existing curricula expected outcomes of the program lead towards students’ competencies:
- to ensure services that will optimize the availability of all material despite its origin and endurance – on the basis of this outcome the core contents linked to information services were gathered;
- to offer information services as a social good, which aims to maximize the societal role of the objects of symbolic culture for the good of mankind – on the basis of this outcome the core contents linked to the formation, supply and insurance of information products and services are constructed;
- to constantly improve the methods by which information is passed from the human being who produces it to the human being who uses it – on the basis of this outcome the core contents linked to the acquisition, organization, maintenance and preservation of various collections is constructed;
- to protect cultural heritage in order to assist the development of civilisation as our aim – on the basis of this outcome the core contents linked to digitalisation and digital born items, the formation of digital collections, and the management of their content is constructed;
- the be able to elaborate information with a supplementary value as the foundation for the improved organisation and direction of the user through the ‘selva selvaggia’ of an abundance of information in a network environment – on the basis of this outcome core contents linked to the new approaches of the organisation and management of information in a semantic web are constructed.

The methodological approach has been founded on the basis of the recommendations of Bologna, which expect a clear articulation of the outcomes of learning, the inclusion of students in teamwork, problem solving, the application of theory to practice (field work), the acquisition of organisational skills (the preparation of national and international conferences) etc. The majority of these demands were successfully met earlier in relation to library studies, but were also required to consider the extension of the learning outcomes to other fields within the information sciences that were embedded into the new program. In order to approximate theory and practice, we turned towards a method of critical collaborative enquiry for which we selected teachers and reflective practitioners in order to discuss the necessary changes, and carried out a self-evaluation of our existing programs. (cf. Riding, Fowell and Levy, 1995)

**Conclusion**

Seeing that both the programs and tools used in order to work with information are changing at an accelerated pace, it is essential that educational programs at all levels, including those that see professional improvement as a lifelong task, be proposed as flexible, of wide scope and attractive to professionals in the LAM sector, as this is the way in which they will yield rewards (especially in regions with a small number of professionals) in individual, separate professions and ensure a better exchange of knowledge and skills.
One cannot easily ascertain how LAM will develop, yet it is possible, with Borgman’s and Scherman’s models as a basis, to conclude that in Croatia the model of permeation already points towards the migration of individual scientists/practitioners between different fields, and not to the convergence at the level of an entire field (experience of an LAM seminar for example). Yet the model of the convergence of fields points towards the existence of certain fields of research which all disciplines share (communications theory, user behaviour theory for example), whereas the model of a common theory finds its vantage point in the modes of practice in particular areas in which certain disciplines are independent at the academic program level, yet there is also a common corpus of theory on the basis of which every discipline finds its specific themes of investigation. New doctorate program is a witness to this, although its foundations are still in individual disciplines, but is open to interdisciplinary themes and problems.

References


