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Professor- librarian team-teaching: online lifelong training in the university

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Abstract: The article describes a case study of lifelong e-training for postgraduates delivered jointly by the Carlos III University of Madrid and Spain's National Library from 2011 to 2017. It addresses course and participant characteristics as well as the results of an assessment aimed to determine both student satisfaction and effective skill transfer to the work environment. This unique professional training initiative may serve as a model in an area where librarians and professors are seldom seen to collaborate in online training on an equal footing.

Keywords: Librarians' training; collaborative training; online training; lifelong learning; training assessment; documentary heritage

1. Introduction

In addition to affording professionals a way to update their job-related skills, lifelong learning enhances their qualifications and potential for promotion. Library and information science professionals have exhibited an interest in keeping up-to-date in order to respond to trends in new technologies, information sourcing, and user needs (Ramaiah & Moorthy, 2002). An obvious demand for such professional training has arisen to fill the void between university pre-service education and dynamic work environments (Gosine-Boodoo & McNish, 2005).

As Gil López and Gallego Gil (2016) note, lifelong learning pursues a dual purpose: it is an essential tool both for adults' ongoing training throughout their careers and for on-the-job training. Both aims are associated with the learning organisation principle, under which any organisation is deemed to be a learning context for all its members, generating knowledge that undergoes continuous change. The initiative for lifelong learning may stem from the employee or the organisation.

This article describes a lifelong learning experience designed by professors and librarians and delivered online by a university. In it, participants work toward one of two degrees, master's or expert, depending on their level of schooling or qualifications. The course, geared to librarians working in national libraries in Ibero-America, aims to upgrade their expertise as a way of improving service provision and the management of the heritage collections that are in the custody of the respective national libraries, in particular in regards to conservation.

National and heritage libraries are entrusted with the custody of their countries' intellectual wealth. They play many roles, from conservation of and access to that legacy to its conveyance and dissemination. The lifelong learning engaged in by their professionals should be in keeping with the technological, political, economic, and editorial change taking place in today's new environment. Very little has been published on the specifics of such training. A review of the literature revealed only one paper, by B. Roberts, that addresses training needs in a cooperative, network-based ambience (Roberts, 1993).

In Spain, despite a generous offering of master's degrees in library and information science, very few courses are geared to the professional librarian working in national and heritage libraries. More general studies focusing on digital information management prevail (Ortiz-Repiso, Calzada-Prado & Aportela-Rodríguez, 2013). At this time, only three specific master's degrees are offered for these professionals: at the Carlos III University of Madrid, the Complutense and the University of Barcelona. The first delivers two courses: one to earn an expert certificate in libraries and the documentary heritage, and the other a master's degree in libraries and documentary heritage.

In 2009, aware of its leadership role in information management and training for future professionals, Spain's National Library began to collaborate with the Carlos III University of Madrid's iSchool in the design of the two aforementioned courses. The aim was to ensure online training to European Higher Education Area standards for Latin American national and heritage librarians in response to the needs identified by the directors of the national libraries belonging to the Asociación de Estados Iberoamericanos para el Desarrollo de las Bibliotecas Nacionales de Iberoamérica (association for the development of Latin American national libraries, hereafter ABINIA). The training described in this article was delivered under a programme for national librarian professionals in Ibero-America adopted at the Twenty-first ABINIA Assembly held at Buenos Aires in 2010.

The demand for such training in national and heritage libraries was voiced by ABINIA on behalf of its 22 member countries. Librarians sought to supplement their knowledge and consolidate their position in their countries' most prominent heritage institutions. While such professionals were the primary target, these courses were also open to anyone interested in managing and conserving the documentary heritage (Universidad Carlos III, 2010). This educational initiative, which may be regarded as unique, lies within the scope of the European Higher Education Area. It aims to enhance personal, civil and social knowledge, skills, and

aptitudes to favour learning opportunities, in keeping with one of the European Union's priorities (Arís Redó & Comas, 2011).

Fundación REPSOL and ABINIA patronage has contributed in part to the success of these courses, given students' origins (many from Latin America) and the economic crisis prevailing when they were launched. The impact of the crisis on human resource departments' training activities and productivity in all manner of organisations should not be understated (Clemente, González-Álvarez & Sanso-Navarro, 2013). Similar situations have likewise been identified in library employees' professional development (Guarria & Wang, 2011).

2. Objectives and method

This article:

- describes a librarian-professor partnering experience in university lifelong e-learning designed for the acquisition and updating of knowledge that targets professionals working in Ibero-American national libraries
- discusses the results of the evaluation of the initiative (Martín Molina, 2014) from two perspectives: on-the-job application of the skills learned and student satisfaction.

The key elements in this experience were collaboration and technology. Collaboration between professors and librarians has been widely addressed in the professional literature, particularly in the English-speaking world, with some experiences dating back to the 1970's. Such cooperation began with the appearance of subject experts known as liaison librarians who, together with professors, delivered traditional librarian training.

A number of teacher-librarian initiatives have been identified. Their classroom presence, however, continues to be viewed as supplementary to professors' (Li, 2012). Most of their lessons are confined to search techniques or resources and assessing information quality and reliability. Some very valuable experiences have been conducted in universities such as the Carlos III University of Madrid, where the institution's libraries, in conjunction with library and information science professors, teach Information Search and Use Techniques, a cross-curricular information literacy requisite for all first-year students (Hernández, Pacios, Vianello, Aguilera & Ramos, 2011). Students' skill in using and evaluating information is the area where the need for closer cooperation between professors and librarians has been felt most acutely. Massis (2012) emphasised the importance of such collaboration and the value it adds to student training.

New technologies have rendered librarian-professor integration more effective and dynamic, with course design that draws from a wide variety of high quality resources to favour learning (Laverty & Stockley, 2008; Cooke, 2012; Tait; Martzoukou & Reid, 2016; Yates et al., 2018). In health service provision, another area where such partnering is routine, librarians are regarded as essential members

of inter-disciplinary medical teams, acting as specialised professionals with more than merely ancillary tasks (Giuse, 1997; Tan & Maggio, 2013).

All the experiences reviewed allude to librarians' cooperation with professors in the same institution, i.e., in-house team teaching. Little has been published on outside librarians who collaborate with educational institutions, however. Inter-disciplinary, inter-institutional experiences have been identified in medicine, such as the course on Biomedical Informatics delivered by the National Library of Medicine at the University of Chicago's Marine Biological Laboratory since 1992 (Moore, 2001). While describing the need for greater participation by librarians specialising in governmental information to design and deliver information literacy courses (Downie, 2007), the literature acknowledges the paucity of such cooperation.

Lifelong learning programmes offered by professional associations such as ALA (Hendrix & Mckee, 2017) are good platforms for professionally-gearred instruction. By the same token, universities are deemed to be institutions particularly apt for intensifying collaboration to gear course organisation and training activities to employment and professional development. Universities and their lifelong e-learning curricula may further the participation of outside professionals in training on a par with professors.

The case study discussed here is a unique experience, with courses designed by a team in which 50% of the members are professional librarians working out of Spain's National Library and the other 50% Carlos III University of Madrid Library and Information Science Department professors. That balance is what makes the approach unique, for librarians provide more than mere support for professors, assuming 50% of the responsibility for subject design, classroom delivery, and educational model monitoring.

Collaboration between Spain's National Library and Carlos III University of Madrid is governed by a partnering agreement between the two institutions that is renewed every 3 years. Both professors and librarians participate voluntarily in the courses. Over the years, the identity of the participating librarians has varied due to National Library staff attrition.

In this experience, participants collaborate at all levels: programme design, teaching, coordination, and management. Librarians and professors jointly define the objectives pursued, the content to be taught, the strategies to be followed, and the learning activities to be conducted in each subject. Those elements, along with assessment mechanisms, are established in keeping with the didactic model chosen and set out in the subject teaching guides, which constitute a professor-student commitment. Lessons are distributed by mutual agreement among the participating educators, depending on each participant's speciality, and the amount of time involved. All activities are supervised by a subject coordinator.

Programme management is likewise shared by the library and the university. Teaching guide content is reviewed at the beginning of each academic year to update materials and avoid possible inter-subject overlaps. In June, librarians and

professors attend a meeting at which management reports on course developments during the year. Improvements in all subjects for the following year based on student performance and satisfaction surveys are also discussed. The meeting affords librarians and professors the opportunity to express and exchange their opinions on the collaborative teaching experience. Similarly, the teaching platform used has a page known as the 'Teachers' lounge' where solutions to specific problems are sought as they arise and information of interest to all instructors is distributed. This forum is also open to educator's opinions and ideas on various matters.

Evaluating training is imperative to improvement. The two features assessed, Kirkpatrick model (2007) levels 1 (reaction, i.e., student satisfaction) and 3 (behaviour, i.e., application of new knowledge to the work environment), were chosen on the grounds of the resources available and assessment-related considerations (Tejada & Ferrández, 2012).

Students were asked to complete online questionnaires to evaluate their satisfaction and on-the-job behaviour change. The partial results for the first three course offerings were satisfactory (Pacios & García, 2016). At the end of each school year, they were asked to participate in a survey to ascertain their satisfaction with the course to introduce possible improvements. As graduating students have a clear idea of the subject and professor performance, their responses can help improve subjects in the long term by increasing or reducing the syllabi or reconsidering strategies (Barrado, Gallego & Valero, 2000). In one of the questions, respondents evaluated the course overall, while others referred to instructors (specifically, teaching methodology and attention to student needs), the teaching materials furnished, the timetable and the time devoted to each subject and respective activities, as well as the utility of the subjects taken (all on a scale of 1 to 5). Students were also asked to identify possible programme shortcomings and encouraged to suggest any improvements they deemed appropriate.

A second online survey, designed to be completed between 1 and 2 years after having passed the course, contained 13 questions relating to on-the-job behaviour change. Obviously and further to recommendations for evaluating lifelong learning, a certain amount of time must lapse before skills learned can be applied in a work environment. The survey posed a number of questions on the type of job held, the reason for taking the course, whether it had enhanced the respondent's professional knowledge and skills or improved their working conditions (or job opportunities if unemployed), and others on the specific application of what was learned about professional tasks. As in the other questionnaire, respondents could add any comments they deemed suitable.

3. The master's and expert course in "Libraries and Documentary Heritage"

The master's degree in "Libraries and Documentary Heritage" is geared to university graduates working or seeking to work in any area of national libraries or heritage document conservation. The expert certificate in library science and documentary heritage, in turn, is designed for non-university library staff with work experience

in national libraries or heritage document conservation seeking to enhance their professional knowledge in library and information science disciplines.

The six modules comprising the master's degree include 13 subjects. Adding in the master's dissertation, the course is worth 60 European Credit Transfer System (ECTS) credits. The areas covered by the six modules are: I: Planning, evaluation and strategy; II: Technological resources; III: Collection management; IV: Technical Process; V: User services; and VI: Digitisation and conservation. The expert degree, designed for professionals without a previous degree or certification, comprises five modules, eight subjects, and 30 ECTS credits. Here the areas covered are associated primarily with technical processes (acquisition, cataloguing, classification, indexing, authority control), technological resources, and the conservation activities in which such staff engages. The master's programme is a 9-month and the expert degree a 7-month course, both beginning in late September.

The subjects in the curriculum are delivered by 50 professors. Half of these are departmental professors and researchers and the other half Spanish National Library professionals and librarians working out of institutions with a substantial documentary heritage (Spanish Agency for International Cooperation, National Historic Archives, Spanish Public Broadcasting and the Carlos III University library). Some of the lessons are coordinated by librarians and others by professors, who attempt to equitably distribute the teaching load to ensure that practical aspects are suitably addressed and relevant to the respective job realities.

The courses are delivered online, the optimal format when teachers and students are separated by geography and time zones (Oguz & Poole, 2013). Carlos III University iSchool professors' long experience in distance education contributes to course quality. This approach is intended to accommodate professionals' demands for lifelong learning compatible with full-time jobs. Professors and students communicate by means of the Carlos III University's 'global classroom,' a platform for Moodle software-based teaching and learning in which the use of interactive tools favours communication, the generation of new ideas, and cooperative learning. Both programmes envisage synchronous and asynchronous learning. The asynchronous approach prevails, since most activities do not call for real-time communication between students and instructors. Synchronous techniques are nonetheless used on occasion, such as during videoconferences with chatrooms providing for real-time Q&A sessions. Students unable to attend such videoconferences when streamed may download the respective recording.

4. Student profile and academic success rate

Figure 1 shows the number and percentage by country of the 175 students who registered for the five course offerings. More non-Spanish students were registered through the third edition (63 vs 49), although their number declined drastically beginning in the fourth. Latin American students were present in all the course offerings, with participants from a total of 15 countries: Argentina, Bolivia, Brazil, Colombia, Chile, Costa Rica, Ecuador, Guatemala, El Salvador, Mexico, Nicaragua,

Panama, Peru, Dominican Republic, and Venezuela. ABINIA grants, covering 70% of the registration fees, together with Fundación REPSOL scholarships (the remaining 30%), funded training for 52 Latin American professionals.

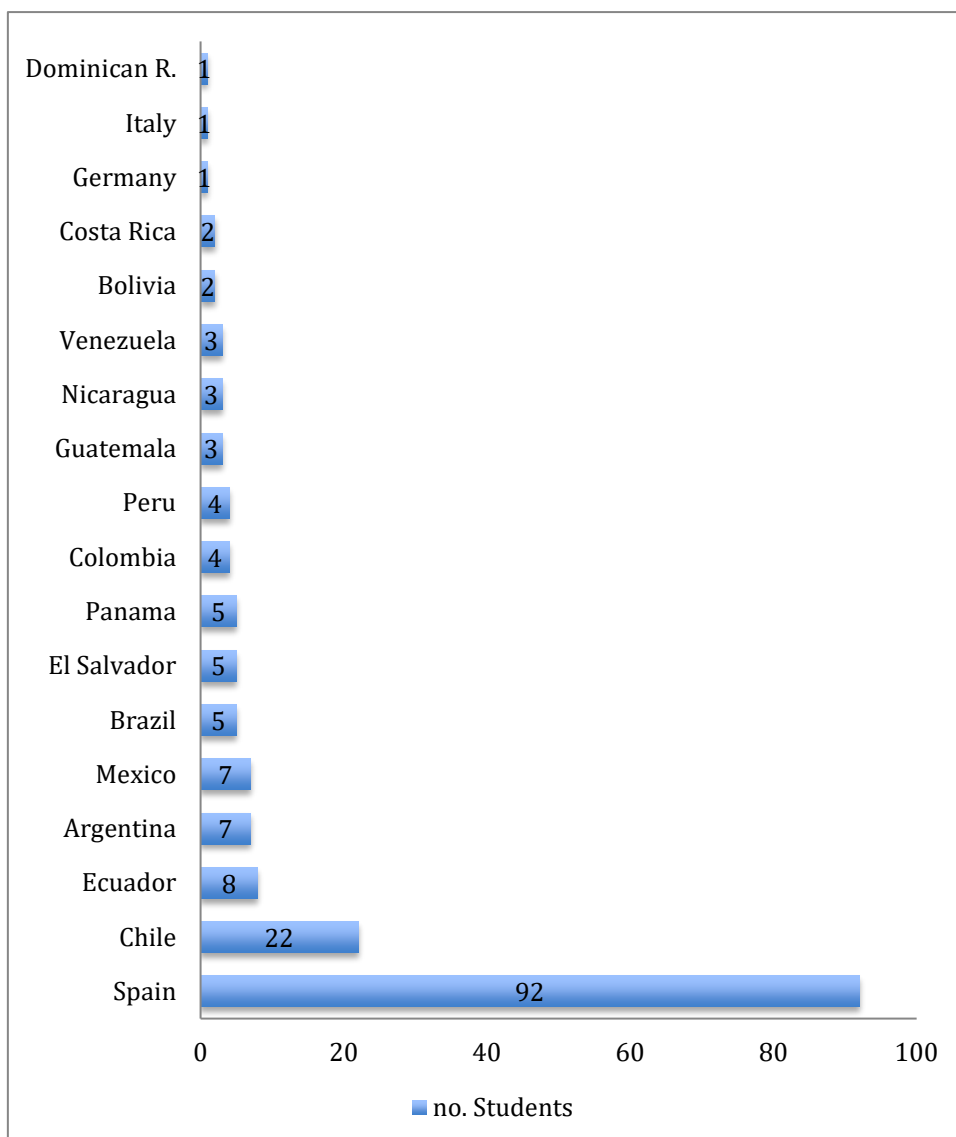


Fig. 1. Country of origin of students registered in master's and expert courses

While student profiles varied widely in terms of type of degree and job, the ones most closely related to the discipline prevailed. The pre-service training accredited by students included humanities (39.85%), which grew from 30% in the first edition 30% to 49.7% in the last, library and information science (29.6%), which declined from 35.5% to 22%, and heritage management and art history (11.12%). Students also had degrees in natural science (7.7%), journalism and audio-visual communication (4.4%), engineering (4.4%), education (3.3%), law (1.1%), and statistics (1.1%).

A total of 78.17% of the students held paying jobs, 66.6% in libraries and archives. Given the characteristics of the courses, it should come as no surprise that 27.1%

worked in heritage libraries, specifically as managers in the national libraries of some of the countries listed. The rest were employed in private libraries, archives and documentary institutions (11.2%), university libraries (5.4%), public libraries (14.8%), special libraries (e.g. museums, law, etc.) (5.7%), and historic archives (2.4%).

Their reasons for taking the course, according to the application for admission and the final survey, also varied. In 63.6% of cases, they sought to upgrade their existing professional skills and acquire new knowledge; 14.8% pursued a certificate to enhance their curriculum vitae; 4.5% wanted to exchange experiences with other professionals; a further 4.5% were urged to take the course by a superior; and 12.5% mentioned other reasons. Students' academic performance was highly satisfactory, with 147 of 175 or 84% earning the degree or certificate.

5. Student satisfaction

In all, 61.6% of the master's programme and 53.2% of the expert programme students responded to the satisfaction survey. The mean scores ranged from 3.1 over 5 (time devoted by students to course subjects) to 5 over 5 (quality of teaching materials in some subjects). The overall score in all five course offerings was indicative of high student satisfaction: 4.26 over 5 for the master's course and 4.31 for the expert course.

The open questions inquired about students' opinion of the curriculum and requested suggestions for course improvements. Some of the master's programme students replied that the curriculum should include a subject on human resource leadership and management and the course load lightened in areas relating to technical processes. As in other experiences in which student feedback in evaluation exercises was applied to curricular design (Mitchell 2013), both suggestions were taken into account in subsequent course offerings.

Students stressed two suggestions for improvement:

- to increase the number of practical exercises
- to explore technological questions more deeply in all subjects.

Given the limitation to the number of credits for each subject and to prevent overburdening students, the demand for more practical exercises was met by offering extracurricular internships at Spain's National Library. An agreement to that effect was signed by the two institutions to enable students wishing to participate to devote from 240 to 450 hours, depending on their needs. Sixteen students chose this option. Only two students travelled to Spain during their holidays to participate in the internships. The others were Spanish library employees who, as noted earlier, were eligible to register in all the course offerings when the quota was not filled.

One of the strengths identified was the fluent communication with professors and their ongoing monitoring of student progress. The weaknesses reported included the heavy workload and the difficulty to organise teamwork due to time zone

differences when members hailed from different countries. Some students nonetheless noted that the variety of nationalities was a source of cultural enrichment and exchange.

6. Behavioural change: on-the-job application of skills learned

Given that it is incumbent on trainers to determine whether the skills taught are applied by students to their work environment upon course termination, course management decided to put that theoretical recommendation into practice (Tejada & Ferrández, 2012). To determine the extent to which the training delivered had induced job behavioural change or possible promotion among students who were already employed or impacted employment options for students who were not working, a second questionnaire was designed. Its 13 questions were answered by 89 students or 50.8% of those participating in the five course offerings. The following describes the most significant responses to the survey on improvement in skills, opinion of the relevance of course content to the work environment, and the application of the knowledge acquired to professional tasks.

Students responded to the question on improvements in their professional knowledge and skills as follows: 50.6% deemed that they had improved 'a lot,' 41.6% 'somewhat' and 7.9% 'barely.' Over half (51.2%) of total respondents claimed better post-course employment conditions, while the other 29.1% who were employed reported no change. Of the 19.8 % who were unemployed, 9.3% landed a job and 10.5% did not.

Students' medium-term opinion of course content in the professional context was 'very good' (40.9%), 'good' (47.7%) or 'fair' (11.4%). Not a single student deemed it to be 'poor.'

The knowledge acquired was applied to professional tasks 'very frequently' by 24.2%, 'reasonably often' by 54.8%, 'seldom' by 16.1%, and 'never' by 4.8%.

The subjects that were of greatest professional utility included predominantly those related to the most routine library procedures, such as acquisitions, collection management techniques, technological tasks, and document conservation.

All the respondents listed at list one daily task to which they applied their knowledge, together covering the entire spectrum of library activity. The responses included tasks relating to digital conservation (digitisation of photographic archives, conservation of historic holdings, digital collection management) and library management and planning (process planning and optimisation, improvement of information organisation through standards, furtherance of cooperative work, and so on). Other areas mentioned were user services (programming information literacy courses, virtual references), dissemination (implementation of a media plan for the institution), and the quality of technical processes (better control of catalogue entries, authorities, cataloguing historic holdings, Marc21 format standardisation, and migration of databases to the Integrated Library System).

Some of the students who were unemployed when taking the master's course were optimistic about its impact on their job prospects.

By way of conclusion

The online training model described meets the demand in Latin American heritage institutions for Spanish language professional specialisation courses. The Carlos III University iSchool's experience as a pioneer in delivering formal e-learning programmes contributed to the success of the initiative. The uniqueness of this programme lies in the synergies stemming from the collaboration between Spanish National Library professionals and university professors, who shared subjects and teaching responsibilities equally. The model is ideal for transferring knowledge between library and information science researchers and professionals working in the field.

This is an example of how technology enhances lifelong education by making it, and therefore the attainment of professional and personal goals, compatible with employment and geographic distance, which in the case discussed here is no small concern.

Training evaluation and student feedback are effective tools for adapting the training curriculum to the professional skills needed, as well as for improving and upgrading the educational offering by detecting possible shortcomings. Students should also be advised that their training does not end with such courses, but rather calls for proactive, ongoing learning beyond the training available in their employer organisations. Among the features of virtual learning most highly valued by students were practical exercises and technology.

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