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Professional qualifications of library and information sciences students of the Pontificia Universidad Catolica del Peru (PUCP): facing the labor market

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ABSTRACT

The authors are conducting an extensive study on the relationship of the professional qualifications offered by PUCP's Information Studies program and the Peruvian job market and opportunities for external recognition of the degree granted. This paper is a partial report of the responses to the first three sections of an email survey send to alumni and students earlier this year. Findings analyzed include perceived image of the LIS professional, value of the courses taught for the actual job requirements and an overview of the job content of positions in the Peruvian LIS environment.

INTRODUCTION

Several circumstances motivate us to conduct an extensive study of the relationship between the qualifications received at the Pontificia Universidad Católica del Perú (PUCP), LIS program and the requirements of the current labor market. On the one hand, we need to start preparing for the next revision of the curriculum and the professional profile of the graduates. The original curriculum of 1986, when the LIS program was created, was modified first in 1998 and later in 2004. We also need to verify a perceived distortion of the labor market, due to the fact that students enter the LIS labor market at the very beginning of their studies and

are already occupying professional positions in libraries or documentation centers half way on their carriers (De la Vega de Deza, 2005). Yet the market demand is not translating into demands for admission to the program. Additionally, there are several movements worldwide working towards creating the conditions for the recognition of university level qualifications across borders (Bologna Declaration for the European Community, MERCOSUR standards) which prompted on us the question: how far are our degrees from international acceptance?

This study is to be done in several phases. The present paper is a partial report of the first phase and analyses the answers to the questions of the first three sections of our survey. We expect to take at least two more years to finish the study.

PUCP offers a Bachelor Degree after three years of LIS studies. Previous to admission to the program students must have completed two-years of mandatory *Estudios Generales*, which translates in at least 5 years of university studies before graduating. Students are also accepted as transfers from other programs. After finishing their studies, graduates can work towards a *Licenciatura*, which requires writing and defending a thesis.

LITERATURE REVIEW

To prepare our survey questions we looked at some recent papers which had applied surveys about the perception of the LIS career. Ard, et al. (2006) surveyed students at Alabama University's School of Library and Information Studies about reasons for entering the career, the job market and recruiting strategies. Duff, Cherry and Singh (2006) applied a very extensive questionnaire to students at the Faculty of Information Studies of the University of Toronto. Du, Stein and Martin (2007) looked at job postings in the United States and offered suggestions related to required academic background and skills. We also looked at the study conducted by Quarmby, Willet and Wood (1999) which followed graduates from the MSc Information Management Program at the University of Sheffield. This was the original source that prompted us to conduct the survey.

We also examined some of the most recent studies conducted in Peru, particularly related to the job market and the curriculum. We looked at the current curriculum (PUCP, 2004) and the analysis prepared by Ana María Talavera Ibarra for a regional meeting that took place in Sao Paulo, Brazil (2006). Cajas Rojas (2003) reports on previous Peruvian Studies about the job market and on his own analysis of job postings in the most prestigious newspaper of Lima, with country-wide circulation and the PUCP's *bolsa de trabajo* (internal bulletin with job postings received via email). De la Vega de Deza (2005) offers a good overview of the PUCP's situation regarding the students profile and relationship of the courses with the jobs being occupied by students and graduates. Salazar (2007), followed up during 2003-4 for her thesis for *Licenciatura*, a small number of cases of PUCP graduates working in nontraditional LIS roles. Finally, Villanueva (2009) reflects on the Peruvian LIS job market, as a result of analyzing the CVs received from applicants from both LIS Peruvian Universities in 2007, for two vacancies in the PUCP's libraries.

METHODOLOGY AND PARTICIPANTS

For the purpose of the complete study, we prepared a questionnaire with 4 sections: I. Details about the participants. II. Education details. III. Work history. IV. Future of the LIS program.

Some open-ended questions were included. This paper only reports preliminary results of the first three sections; the fourth section will be analyzed in a separate paper. The complete questionnaire can be found in appendix 1.

The questionnaire was sent via email, in March 2009, to 91 identifiable alumni and 27 current students of the LIS program at PUCP. Ten of these emails were returned as undeliverable, leaving us with a total sample of 108 participants. We received 61 valid responses (56.5%): 42 from alumni (almost 52%) and 19 from students (70%). We consider this to be a valid sample for the purpose of our study.

LIMITATIONS

Originally we expected that for this part of the study we would also conduct interviews with prospective employers. Logistic problems derived from the geographic distance between the authors prevented us from scheduling the interviews for the appropriate dates.

We expect that the fact that the survey was conducted by e-mail and therefore could not guarantee anonymity didn't introduce any bias on the responses. Our feeling is that it didn't.

THE SURVEY

I. Participants

Gender and Age

Looking at the alumni population, female respondents represent 60% of the alumni participants. In relation to age, most of them are over 31 years old. This is due to the larger number of responses from earlier cohorts (more than half (24) of the participants graduated before the year 2000).

Regarding the current students, females represent more than 73% of the participants, which reflects the current student population distribution. Age distribution shows that the largest group is that on the 20-25 years old range (57.9%), yet we seem to be attracting also 41+ year old students (21%).

Table 1: Participants Demographics

	Gender				
	$\boldsymbol{\mathit{F}}$	M	20-30	31-40	41+
Alumni	25	17	9	17	16
Students	14	5	11	4	4
Total	39	22	20	21	20

Graduation year

24 of the alumni graduated between 1988 and 1998, and represent the students who took the courses of the first curriculum. 11 respondents graduated between 2000-2004, and studied the courses of the reformed program of 1998. Both groups obtained the degree in Library and Information Science. The 7 who graduated after 2005, took the courses leading to the current degree in Information Sciences, introduced in 2004.

Of the 19 current students, 5 are in the first year of Information Sciences, 8 in the second year, and 6 in the third and final year.

Other university studies

Two additional questions were asked related to university careers pursued before and after studying LIS.

17 of our alumni were enrolled in LIS as a second career: 9 had finished their previous career and 8 transferred before finishing their first one. Communications (5), Law (2) and Education (2) were at the top of the list. Other finished careers were Administration, Anthropology, Linguistics and Psychology.

Of the students, two have finished Anthropology and Administration and one is a former intelligence officer in the Air Forces.

After LIS, 23 alumni pursued another degree: 16 have finished a second degree (usually a Master degree) and 6 have incomplete studies. Here, Project management (3), Education (2) Communications (2), History (3) and Systems and computer related degrees (3) are the most sought careers.

II. LIS Education details

This section of the Survey requested information on the reasons why they selected the career, the image they had of LIS previous to their enrollment in the career, their perceptions of the value of the courses studied and of the resources provided by the PUCP.

Reasons to register in the LIS program

We asked participants to choose up to three options from a selection of 8. Results show that both groups, alumni and students, coincide in mentioning the interdisciplinary nature of the career as the top reason for registering in the LIS program, followed by the opportunity to access and disseminate information and to find a job in the area.

As expected, alumni were thinking about working with books, while current students were attracted to working using Internet. Both groups thought that LIS is a profession that would open doors for them to study abroad.

Table 2: Reasons to study LIS (up to 3 choices)

Reasons	Alumni	Students
Interdisciplinary nature	33	16
Have access and disseminate information	27	9
Employment opportunities	20	11
Possibility to work with books	11	2
Opportunities for graduate studies abroad	7	7
Degree valued by society	3	3
Working using Internet	0	6
It is an easy career	0	0

When asked for a hypothetical review of their decision to study LIS, 28 alumni said they would register in LIS again, 12 would not, and 2 did not answer. Reasons given to persist in the career were numerous, the most often mentioned related to the opportunity to combine it with other interests or studies, and the possibility of applying it in many situations and activities. Other reasons worth mentioning were: vocation, love for the career, new and innovative career still growing, a step to pursue further studies, and job satisfaction. Those

who indicated they would not register again, mentioned their interest towards other disciplines or their preference for pursuing a further degree on their original career. A couple mentioned the poor image of the profession and low salaries.

On the side of the students, 15 said they are happy with the career or confirmed their choice for LIS, 3 students said they have made the wrong choice, and 1 did not answer. Among the reasons for a negative answer, 2 of them mentioned they have developed new interests and the third has been turned away due to the very negative image of the profession among members of her family and in her work environment.

Initial image of the LIS career

This question was expected to give us additional information about how students and alumni perceived the work in LIS prior to their studies.

Table 3: Previous image (multiple choices)

A LIS graduate	Alumni	Students
works with books in a library	31	14
can work in many fields	18	9
is someone who knows about everything (almost genius)	18	8
works with computers	13	6
fetches books in a library	9	8
does not like working with public (people)	7	4
is probably ill-tempered woman	6	2

We were surprised to see the number of current students who said they thought they were entering into a career to work with books in a library, even though the program is now called Information Sciences. Some old stereotypes are still showing (fetches books, knows about everything), while others seem to be fading (ill-tempered woman), but not gone.

Courses studied

Alumni and students were asked to value the courses they have taken during their studies at the University. The scale ranged from 0 (not important) to 4 (extremely important). We must mention that not all the courses were studied by all the respondents, as there were changes in the curriculum, therefore total number of responses vary from course to course. Because it was not possible to determine how many participants had taken each course, our table shows percentages based on the total number of possible responses for each group (alumni and students).

We have extracted here, from the complete tables, the course ranked highest and lowest by both groups. The complete tables can be found in appendixes 2 and 3.

Table 4: Courses studied ranked highest

N=61, Alumni=42, Students=19

5 highest ranked courses (scale 3+4)	Alumni	Students
Information technology	38 (90.5%)	16 (84.2%)
Information resources and services	36 (85.7%)	15 (78.9%)
Information organization and retrieval	35 (83.3%)	14 (73.6%)
Management	33 (78.5%)	11 (57.8%)
Research courses	31 (73.8%)	
Introduction to Information Sciences		13 (68.4%)

To determine the courses that ranked highest we have added the results of scales 3 (very important) and 4 (extremely important). It is interesting to see that in spite of the changes in the curriculum through the years, both groups ranked at the top the same courses although the recognition of importance by alumni is much higher, probably a reflection of experience.

Table 5: Courses studied ranked lowest

N=61, Alumni=42, Students=19

5 lowest ranked courses (scale 0+1)	Alumni	Students
History of recorded knowledge	13 (30.9 %)	4 (21%)
Editorial workshop and electronic publishing	13 (30.9 %)	4 (21%)
Archives and Museums	9 (21.4%)	4 (21%)
Knowledge management	9 (21.4%)	
Statistics	8 (19%)	3 (15.8%)
Communication studies		3 (15.8%)

For the lowest ranked courses we added the results of scales 0 (not important) and 1 (somewhat important). Here again both groups coincide in naming the three least important courses. Knowledge management made the fourth place for the alumni group while for students it received 52% approval (ranked 6th highest).

Participants were asked to suggest additional courses not currently offered by the program, that could be necessary for effective professional performance. Suggestions were found to be less useful than expected. Some alumni suggested courses already included in the curriculum and other suggestions were for non-university level courses. We have retained Web 2.0, Organizational and cognitive psychology and Project design. The current course offering, with summaries can be found at

http://www.pucp.edu.pe/facultad/letras_ciencias_humanas/index.php? option=com_detalle&task=view&secc=14&cat=28&cont=54&btn_back=1&Itemid=57

Resources offered by the University

The last question of this section asked participants to value services and resources offered by PUCP and which are not available at the other Peruvian university with a LIS program. We think these services are valued by PUCP students in general and could be a factor in attracting some students to our LIS program

Table 6: Ranking of resources available

Resources for the program in Information Sciences /librarianship	Alumni	Students
Access to up-to-date books and journals in the library	1 st	5 th
Availability of online databases	2 nd	1 st
Availability of remote access to online databases (from home)	3 rd	2 nd
Professors with studies abroad	9 th	3 rd
Multidisciplinary study program	6 th	3 rd
Evening and "block" class schedules	7 th	5 th
Library service offered by professional librarians	3 rd	9 th
Practicum	7 th	8 th
Possibility of employment at PUCP	10 th	9 th
Employment opportunities via contacts with other institutions	5 th	5 th

Here we found that resources have a total different value for our alumni and our current students. The ranking reflects the increased importance of online resources over print in recent years. Yet the holdings of librarianship and information science material in print in the PUCP library are the best in the country. Online resources only became available at PUCP around the year 2000, and remote access is even more recent (4-5 years) and limited to a few databases.

Other interesting findings relate to differences in value given to lecturers with studies abroad, which are highly appreciated by current students, and receiving service in the library provided by librarians, not a common occurrence in other universities until recently, thus appreciated by our alumni.

III. Work History

The survey asked four questions in this section.

Current work situation

The first question wanted to find out how many of the participants are currently working on LIS jobs and how long have they been in their current job. 32 alumni answered yes,7 are working in other fields and 3 did not answer. In answering how long they have been in the current job we found a wide range, from 4 months to 16 years.

Of the student respondents 14 are working in LIS related jobs and 5 are either not working or not working on the LIS field. As for time in the current job, answers ranged from 4 months to 12 years. We need to look into this further as we could not determine if some respondents started working in a LIS environment but not performing LIS tasks before being admitted to our program.

To our second question, difficulty of finding a job, both groups responded overwhelmingly that it was not difficult at all. Some didn't have to look at all, they were offered the job. The majority took 2 to 4 months to find a job. Only one said it took 12 months.

Type of institution where they work

Finding about what type of institutions are attracting our alumni and students is one of the most important variables for our study, as we will be reviewing if the profile of our graduates matches the requirements of the market.

Table 7: Employers

Type of institution	Alumni	Students
National Library	0	0
Public Library	1	1
School library	3	2
University Library	14	5
Specialized library	2	2
Information/documentation Center	3	0
Analyses and dissemination Center	0	1
Archive	1	1
University (teaching or research)	7	1
NGO	5	0
Self-employed	4	0
Other (indicate)		
Government institutions	2	1
Total	42*	14

• This total is due to alumni working part time in two places

These results confirm previous studies (Villanueva, 2009; De la Vega, 2005), which indicate that universities and university and higher education libraries are the main employers for PUCP's LIS graduates, either as librarians or as lecturers/researches. This is also true for all LIS graduates in Peru who are likely to search for jobs in a University library, particularly now that many private Universities are giving importance to their libraries and are beginning to automate their services and buying electronic resources. NGO's are the second largest employer group for our group of graduates while students are everywhere. Surprisingly we have not been able to place alumni or students in our National Library in spite of its new building and location, Probably low salaries and traditional practices don't attract PUCP alumni or students.

Tasks performed

Participants were offered a list of 26 tasks commonly performed in libraries and other information services. Based on findings of previous studies (Villanueva, 2009; De la Vega, 2005), and on common knowledge and informal communications related to the great mobility in the labor market, we decided to ask for tasks performed in the current and the previous 3 jobs. Participants were asked to mark as many as appropriate for each of those

positions. Responses proved us right, because many students indicated that they were indeed in their 4th job.

We were trying to find change or improvement patterns as participants progressed in the jobs, but instead we found that there was no pattern. Some task repeated themselves from job 1 to the last (office work, information searching, classification). And some advanced tasks were performed by students on job 1 (SDI, consulting, database design, and others). Further analysis of individuals is required and will be done in the next phase of this study.

We present here a table which shows only the tasks more frequently indicated by the participants, in all their positions, ranked by total frequency. The complete task tables (both for alumni and for students) can be found in appendixes 4 and 5.

Table 8: Tasks performed

Tasks	Alumni	Students
Office work	1	1
Classification, cataloguing, indexing	2	5
Client services	3	4
Information searching in libraries	4	3
Entering bibliographic data	5	1
Internet searching (for clients)	6	7
Library users training	7	8
Reference	8	6
Personnel supervision	9	
Personnel training	10	
Database searching (for clients)		8
Selective dissemination of information		10

Although not everybody has had four jobs, the results show great mobility, even for students. The fact that office work is a recurrent task, could indicate that respondents (both students and professionals) may be the sole workers of their LIS unit. Entering bibliographic data in automated systems and classification and cataloguing jobs show the trend to automate; and searching in libraries, on the Internet and databases may indicate jobs as research assistants.

We need to explore further, but at this stage we tend to agree with Carmen Villanueva (2009) in wondering if the employers who hire students to perform tasks requiring advance knowledge and experience, know the difference between the work that can be performed by an experienced professional and that of a student. We guess that unwillingness to pay proper salaries may be a big factor. And we wonder if students and new professionals realize what are their limitations and the damage they do to the image of the profession.

SUMMARY AND QUESTIONS FOR FURTHER DISCUSSION

Demographic data shows a change in the gender distribution. The female/male ratio is now 2 to 1.

It is interesting to see that a large number of our alumni find the LIS degree, offered only at the Bachelor's level not to be enough to practice the profession. More than half of them have gone for another (usually higher) degree, in part due to requirements of their job. And many of our students come to librarianship as a second career.

Reasons to study LIS only differ in that current students favor Internet over working with books. There wasn't a single person who considered LIS to be an easy career.

Alumni and students coincide in mentioning the core course (information technology, resources and services and organization of knowledge) at the top. Giving low importance to Statistics and the Research seminars seems to indicate that students take the profession as a practical one.

Ranking special resources only available at PUCP, was the one aspect where alumni and students disagreed. This shows a generational change which requires further study.

Our libraries are only now beginning to automated their LIS systems, and in some cases automation is only applied to the catalogue. This situation reinforces the traditional image of libraries and librarians as organizers of books and creates a limited job market, despite the change in name of the career.

When we look at the courses offered during the three years of specialization studies, we see a similar curriculum than that offered by most foreign universities at the Post-graduate level. Yet it doesn't seem that students are moving towards the information sciences area, because the tasks that they are performing are very traditional and technical and also managerial. On the other hand students are being hired to perform professional task, with short-term contracts and low pay, distorting the labor market.

Something to follow up is the indication that students and alumni are acting as consultants from very early in their career and also that many of our graduates and students are working as one-person librarians. This and other issues will be addressed in subsequent phases of our research.

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Appendix 1: The questionnaire

SURVEY FOR STUDENTS AND ALUMNI OF THE INFORMATION SCIENCES AND LIBRARIANSHIP PROGRAM OF THE PUCP

I. About the p	participants	
1.1 Student?	Cycle Alumni? Da	ate finished
1.2 Age: 20 d	or less 26 -30 36-4	40
2	1-25 31-35 41	or more
1.3 Sex: Male	e Female	
1.4 Previous u	niversity studies in another career (indicate)	
Finished [Not finished	
1.5 University	studies after finishing the Information Sciences degree (indicate)
Finished	Not finished	
II. Education	details	
2.1 Reasons to	register in the LIS program	
	Reasons to study Librarianship/Information Science Interdisciplinary	Check
-	Employment opportunities	
-	Possibility to work with books	
-	Have access to information and disseminate it	
	It's an easy career	
-	Opportunities for post-graduate studies abroad	
	Work searching the Internet	
	The degree is prestigious (valued by society)	
	Other (indicate)	
2.2 If you had Librarianship?	the opportunity to choose a career again, would you choo YES NO	se Information science
Why?		

2.3 Image of the career in *Librarianship/Information Science* **prior** to studying it

Those who graduate on this career	Check
work with books in a library	
fetch books in a library	
can work in many fields	
are probably ill-tempered women	
are those who know about everything (almost geniuses)	
do not like working with public (people)	
work with computers	
Other (indicate)	

2.4 Evaluate your academic learning in terms of content and relevance for your professional performance

0-not important, 1 somewhat important, 2 fairly important 3 very important 4 extremely important

Courses in Librarianship and Information Science	0	1	2	3	4
Introduction to Information Science and Information and					
Knowledge courses					
Information Technology courses					
Management courses					
Research courses (seminaries)					
Information resources and services courses					
Communication courses and workshops					
Editorial workshops and Electronic publishing					
Information organization and retrieval courses					
History of recorded knowledge courses					
Archives and Museum courses					
Knowledge management courses					
Statistics courses					
Telecommunications courses					
Practicum					
Studies in other careers					
Other courses (indicate)					

		• • • • •	• • • •	••••		
2.6 Evaluate the resources offered by the PUCP for the Splibrarianship	oecialization in	Inf	orm	atio	n Sc	ien
)-not important, 1 somewhat important, 2 fairly important mportant	3 very impor	rtant	4 e	xtre	mely	/
Resources for the program in Information Science //librarianship	ces	0	1	2	3	4
Access to up-to-date books and journals in the libra	ry					
Availability of online databases						
Availability of remote access to online databases (fi	rom home)					
Professors with studies abroad						
Multidisciplinary study program						
Evening and "block" class schedules						
Library service offered by professional librarians						
Practicum						
Possibility of employment at PUCP						
Employment opportunities via contacts with other in	nstitutions					
II. Work history						
.1 Do you currently work in the LIS field?	YE	s [
me in current job? (# of months)						
	1	C' 1	ı	Г		_
.2 Difficulty to find a job?. Approximate time in months	it took you to	find	one	e L		
.3 Type of institution where you are currently working						
Type of institution	Check					
National Library						
Public Library						
School library						
University Library						
Specialized library						
Information/documentation Center						
Analyses and dissemination Center						
Archive						

NGO	
Self-employed	
Other (indicate)	

3.4 Type of tasks you perform in your current and 3 previous jobs. Mark with an X all that apply.

Tasks	Job 1	Job 2	Job 3	Current
OCC. 1	(earliest)			job
Office work				
Acquisitions	1			
Classification, cataloguing, indexing				
Client services				
Library users training				
Reference				
Archives management				
Entering bibliographic data				
Information searching in libraries				
Internet searching (for clients)				
Database searching (for clients)				
Abstract writing				
Selective dissemination of information				
Knowledge management				
Competitive intelligence				
Personnel supervision				
Personnel training				
Web sites/pages design				
Web sites/pages updating				
Database design				
Publications editing and design				
Documents digitization (scanning)				
Consulting				
Translation				
Programming				
Research				
Other (indicate)				

IV.	About the future of the LIS program
3.5	Additional specialization courses needed for your current job (list only 20+ hours courses)

4.1 Evaluate the qualities and competencies all Information Sciences/librarian professionals should have. Check all that you consider necessary

0-not important, 1 somewhat important, 2 fairly important 3 very important 4 extremely important

Qualities and Competencies	0	1	2	3	4
Analysis and Synthesis capabilities					
Avid reader					
Critical thinking					
Leadership and management capabilities					
Creativity					
Proactive					
Client relationship, interpersonal communication					
Inquisitive and intellectual mind					
Knowledge of computers, programming					
Knowledge of information technologies (Web, databases)					
Knowledge of technical processes					
Knowledge of Statistics					
Second specialization (degree in another area)					
General culture					
Languages					
Other (indicate)					

4.2 Suggestions of strategies to recruit more students to the LIS career:

Strategies	Check
Change the name of the career (write down your suggestion)	
Move the specialization to another Faculty (which one?)	
Change the curriculum (list new courses in 2.4)	
Organize fairs, events, etc.	
Organize talks, congresses, conferences	
Organize cine clubs or discussion forums	
Run promotional campaigns in Estudios Generales (Science and Letters)	
Conduct interdisciplinary research	
Offer bursaries	
Offer exchange opportunities to study abroad	
Invite professors from foreign universities	
Other (indicate)	

4.3 Final comments: Please provide suggestions/comments that will be useful in improving the career and profession at the PUCP

Appendix 2 Courses in Librarianship and Information Science - Alumni

Courses in Librarianship and Information Science	0	1	2	3	4	
Introduction to Information Science and Information and Knowledge courses	0	8	11	15	8	
Information Technology courses	0	1	3	14	25	
Management courses	0	2	7	11	22	
Research courses (seminaries)	0	1	9	13	18	
Information resources and services courses	0	2	4	16	20	
Communication courses and workshops	1	6	10	17	6	
Editorial workshops and Electronic publishing	3	10	7	15	6	
Information organization and retrieval courses	0	2	5	14	21	
History of recorded knowledge courses	1	12	14	11	2	
Archives and Museum courses	2	7	13	14	5	
Knowledge management courses	0	9	7	10	14	
Statistics courses	2	6	11	15	7	
Telecommunications courses	0	4	11	10	7	
Practicum	1	4	12	6	18	
Studies in other careers	2	2	7	15	13	
Other (indicate) Students exchange					1	

${\bf Appendix\ 3\ Courses\ in\ Librarianship\ and\ Information\ Science\ -\ Students}$

Courses in Librarianship and Information Science	0	1	2	3	4
Introduction to Information Science and Information and		1	5	5	9
Knowledge courses					
Information Technology courses		1		3	13
Management courses	1	0	4	7	4
Research courses (seminaries)	0	1	3	6	2
Information resources and services courses	0	0	4	5	10
Communication courses and workshops	0	3	6	2	4
Editorial workshops and Electronic publishing	2	2	3	6	0
Information organization and retrieval courses	0	0	2	5	9
History of recorded knowledge courses	1	3	9	2	2
Archives and Museum courses	1	3	4	5	2
Knowledge management courses	0	1	0	5	5
Statistics courses	0	3	2	4	3
Telecommunications courses	1	1	0	5	4
Practicum	0	3	2	1	7
Studies in other careers	1	1	2	2	3
Other courses (indicate)					

Appendix 4 LIS tasks performed by alumni

Tasks- Alumni	Job 1 (earliest)	Job 2	Job 3	Current job
Office work	(earliest)	16	14	25
Acquisitions	7	4	9	11
Classification, cataloguing, indexing	15	19	15	20
Client services	17	14	13	18
Library users training	7	12	9	18
Reference	14	11	7	14
Archives management	4	7	4	2
Entering bibliographic data	16	16	9	14
Information searching in libraries	13	14	12	18
Internet searching (for clients)	13	11	9	15
Database searching (for clients)	8	8	7	10
Abstract writing	8	6	2	8
Selective dissemination of information	9	6	6	9
Knowledge management	2	3	6	9
Competitive intelligence	3	1	2	4
Personnel supervision	7	7	7	19
Personnel training	2	7	8	17
Web sites/pages design	7	7	4	10
Web sites/pages updating	5	6	10	12
Database design	8	8	4	10
Publications editing and design	3	5	6	11
Documents digitization (scanning)	4	7	4	11
Consulting	3	6	4	7
Translation	1	3	3	3
Programming	4	4	1	5
Research	3	4	6	11
Other (indicate)				
Gestion de proyectos				5
Direccion y gerencia				1
Animacion lectora				1
		1		

Appendix 5 LIS tasks performed by students

Tasks - Students	Job 1	Job 2	Job 3	Current
	(earliest)			job
Office work	6	6	5	6
Acquisitions	3	2	0	5
Classification, cataloguing, indexing	7	3	3	7
Client services	6	6	3	6
Library users training	0	4	2	6
Reference	4	4	2	6
Archives management	0	1	2	2
Entering bibliographic data	6	4	3	10
Information searching in libraries	3	6	3	10
Internet searching (for clients)	2	3	2	7
Database searching (for clients)	1	2	2	7
Abstract writing	0	2	2	3
Selective dissemination of information	1	3	2	5
Knowledge management	0	1	3	4
Competitive intelligence	0	1	2	2
Personnel supervision	0	2	1	3
Personnel training	0	1	0	2
Web sites/pages design	0	0	2	1
Web sites/pages updating	0	0	2	1
Database design	1	0	3	1
Publications editing and design	0	0	0	1
Documents digitization (scanning)	2	2	2	3
Consulting	1	1	2	2
Translation	1	1	2	0
Programming	0	0	0	0
Research	0	1	1	3
Other (indicate)				