

Algerian University Libraries And The Digital Age: New Communication Behaviors

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Abstract: Scientific and technical information across the world has led to a veritable globalization of knowledge through the production, visibility and dissemination of knowledge and skills produced by researchers and research establishments. In the digital era, these changes have given rise to the existence of several communities or consortia in higher education in order to bring users closer. Various changes linked to advancement in information technologies have changed work methods and behavior amongst professionals in the information and communication sciences field. Our preliminary survey reveals that the Algerian university libraries studied wish to create a community of exchange and collaborative work between professional colleagues in this new digital age.

Keywords: University library, digital, digital library, communication, collaborative work, ICTs, Algeria.

1. Introduction

Information has become a resource as valuable as raw materials, used in the sustainable development of a country. Its importance is visible in the processes of supporting management, scheduling and decision making. It is for this reason that scientific, technical, industrial and economic information is establishing itself as a strategic resource.

In the social sense, information contributes to scientific and cultural advancement through university and public libraries, documentation centers and information systems. In general, we know that the emergence of new technologies, more specifically the Internet, has overthrown the everyday information practices of users. According to Thivant and Bouzidi (2005) “The arrival of an all-digital environment and the Internet within the workplace

modifies the activities of professionals and profoundly changes their information access practices”.

This issue has been the subject of much research, resulting in several publications dealing with the debates between researchers and professionals in the field of information and communication sciences. According to Gallzot et al. (2008) we have approached “the ‘digital revolution’ as an external factor impacting on the university world, whereas it is one of the main actors, if not the main actor, at the origin of this revolution and to suggest that the research practices evolve endogenously through the integration of ‘digital data’: through the digitalization of scientific journals, through the development of Open Access, through the utilization of Web 2.0 tools (researchers’ blogs, laboratory wikis...)”

2. Research Problem

In this context, Algerian universities constitute one of the fundamental pillars in the construction of a society of knowledge, with a very young population which represents a veritable asset in the development process. Algeria has accordingly invested enormously in the training sector, establishing 36 universities, 15 university centers, 16 National Schools (*écoles nationales*), 5 Higher School of Education (*écoles normales supérieures*) and 10 Preparatory Schools (*écoles préparatoires*). The country also aims to enlist 28 000 research and teaching staff and 4 500 permanent researchers.

There is thus a solid intellectual capital, but do these skilled actors, supposed to contribute to development through their scientific production, find useful and relevant information at the right time?

The role of information- at a time of new tools of communication and the Web- is thus becoming primordial in universities. To this effect we have manufactured documents (journal articles, commercial electronic books), as well as local productions such as born-digital documents. To these can be added knowledge sharing and transfer thanks to different collaborative work tools- knowledge access tools (internet portals, mailing lists, RSS feeds, news, wikis), communication and collaboration tools (email, videoconferences, specialized forums, e-Learning) and workflow tools (task managers, diary managers, etc.).

In the digital age, however, these changes have given rise to the existence of several communities or consortia in order to bring users nearer. In this paper we will thus discuss the different changes linked to advancements in information technologies and more particularly those in telecommunications which have, in the last decade, dramatically changed our way of working, thinking and reacting. In addition, how must Algerian university libraries adapt to this change and how will professionals have to communicate faced with these ICT and their users?

In order to respond to these types of questions we are undertaking a national survey of libraries to attempt to understand their new behaviors in the digital age.

Given that the wide scale of such a survey, we are presenting here only the results of a preliminary study (Gallezot Gabriel and Al, 2008).

3. Methodology

Our survey was organized into two principal phases. An exploratory phase that consisted of undertaking qualitative interviews and another phase followed by a preliminary survey (pilot study) to prepare for the definitive survey. Relevant establishments were contacted officially in order to authorize the undertaking of this survey of conservation staff and librarians.

The results of these two approaches indicate that the qualitative survey and the pre-test were very effective in gathering opinions and comments that appeared to us more personal and subjective. It is for this reason that it is important to note that beginning our study with a qualitative approach allowed a comprehension of thought and behavior mechanisms of the professional community under study.

The objective of our preliminary survey is thus to test the national questionnaire project in order to evaluate ease of comprehension, degree of acceptance and ease of interpretation. As a general rule this test is absolutely necessary and must be undertaken with rigor on a limited number of persons (20 to 30) demonstrating the characteristics required by the members of the survey population. It is in this way that we chose a sample of a total of 50 questionnaires distributed in June 2012. We succeeded in obtaining a total of 30 respondents, representing a response rate of 60%.

Our preliminary survey approach thus allowed us to test our national questionnaire project on a sample size of 30 library science specialists working within five National Higher Schools Studies (Grandes Écoles Nationales Supérieures) : the National Higher School of Veterinary Studies (École Nationale Supérieure Vétérinaire), the National Higher School of Agronomy (Ecole Nationale Supérieure Agronomique), the Architecture and Urban Planning Polytechnic (Ecole Polytechnique d'Architecture et d'Urbanisme), The National Polytechnic School (Ecole Nationale Polytechnique) and the Higher National School in Computer Science (Ecole Nationale Supérieure d'Informatique).

This allowed us to verify the pertinence and the comprehension of the questions posed and to readjust the final questionnaire depending on the remarks and suggestions from the targeted professional community.

4. Results and Discussions

4.1. Librarian- the professional profile

Given that we used a sample size of 5 National Higher Schools of Teaching and Research it is noted obviously that the percentage rates are almost identical between these establishments (Figure 1).

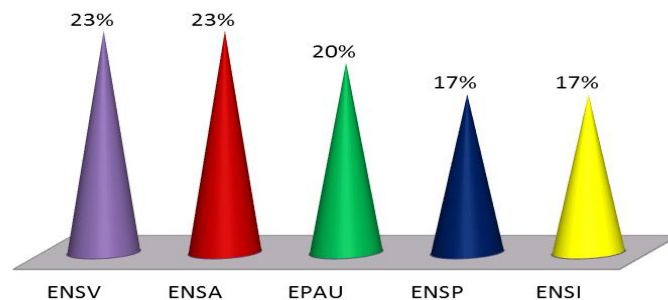


Figure 1: Establishments of affiliation- university librarians of National Higher Schools

The results of our survey reveal that the majority of professionals hold a university education in library science and documentary sciences. Seventy percent hold a professional grade of attaché within university libraries. By contrast, 17% are in the post of library curator. This is followed by a rather weak percentage rate which is shared by some respondents having the professional grade of library assistant and senior library curator with a rate of 7% and 6% respectively (Figure 2).

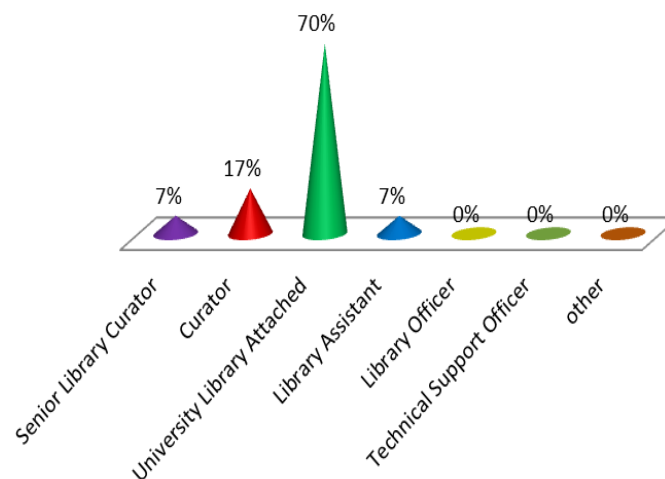


Figure 2: Professional grades of librarians employed within National Higher Schools

4.2. University library digital resources

The digitization of the various university libraries has been no small affair, with all of the establishments having undertaken this task. In Algeria, efforts are

being made to integrate the information society and reduce the north-south gap by informatization projects, access to the Internet and digitization.

This position was confirmed by the organization of an international conference in 2007 by the Centre de Recherche et d'Information Scientifique et Technique (CERIST) – a center for research and scientific and technical information-which aimed to put forward recommendations that would allow Algerian libraries and centers of documentation to use the new possibilities offered by digital technology .

The establishment of university library websites is an expression of the significant effort being made to equip the various Algerian universities and teaching and research schools with an “academic research” network. Access to web-based information is now possible for the majority of university users (faculty staff, students and professionals).

The emergence of a certain number of projects which must respond to the needs of scientific research (e.g. the virtual university, the virtual library) illustrates the interest accorded to knowledge sharing. To this end, the Virtuelle Agronomique Algérienne (BVA) – the Algerian Virtual Agronomy Library - aims to establish itself as a collective memory for the sector, while at the same time guaranteeing the visibility, sharing and application of research results. The BVA is part of a much larger project concerned with the creation of an Algerian agricultural documentation network (Réseau Algérien de Documentation Agricole- RADA), and is the fruit of a collaboration between the National Higher School of Agronomy (Ecole Nationale Supérieure Agronomique (ENSA)) of Algiers and the International Center of Agronomy Research for the Development (Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)) in Montpellier, which is a French research center working with developing countries to tackle international agricultural and development issues. With knowledge sharing in mind, this network has allowed the establishment of a digitalization methodology of documentary holdings in the field of agronomy and the creation of a collective database, stored on a shared server and allowing online access to the national scientific output.

Regarding this information system, organized around university library websites, we found that only 20% of the respondents no not yet have access (Figure 3). This corresponds to the ENSV library which has been totally renovated in order to conform to universal library science norms. This library has been completely neglected due to the absence of staff qualified in the information and communication sciences field .

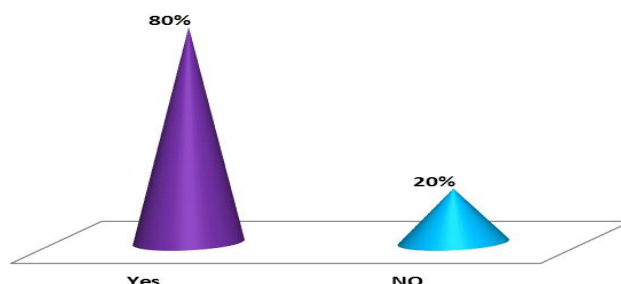


Figure 3: University library websites in Algiers

Furthermore, all the libraries questioned affirmed that they had digital resources at their disposition. These resources are utilized mainly for the online databases, digital portals and e-books, with a percentage rate of 40%, 28% and 21% respectively (Figure 4).

In addition, other resources were identified by the professionals who appear to be driving forces for the advancement of users' research. We can cite as example the local scientific output of each teaching and research institution such as final year study projects, masters and PhD theses in electronic form, as well as the setting up of the new national system for online documentation (Système National de Documentation en Ligne -SNDL).

The SNDL is a truly collaborative platform and a real document management tool. It is accessible online through the ARN network (Algerian Research Network) hosted and managed by the scientific and technical information research center (Centre de Recherche d'Information Scientifique et Technique). It provides the ensemble of the scientific community (researchers, faculty staff, PhD students and undergraduates) with current scientific information in digital form. It also brings together different processes - a national and international scientific output.

The content is presented in the form of digital journals (e-journals), electronic books (e-books), scientific and scientometric databases, covering all scientific fields (medical and biological sciences, the humanities, technology, etc.) made available to our researchers through content updated by the editors of recognized scientific publications.

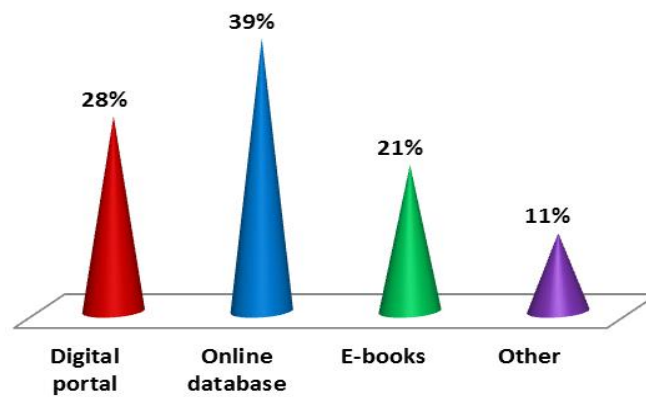


Figure 4: Types of digital resources held by Algerian university libraries

4.3. New communication behaviors

4.3.1. Dissemination of Information

The objective of this section is to study the level of appropriation of ICTs by professionals in their documentation practices as well as their relationships with users. Librarians communicate information to users primarily through lists of new acquisitions (42%) and posting online (31%). Journal Index Bulletins represent only 19% (Figure 5).

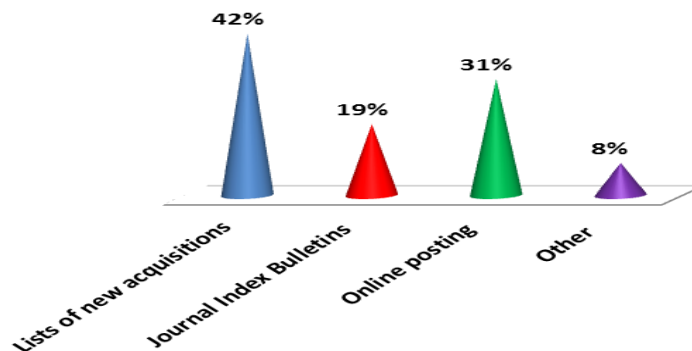


Figure 5: Communication of information to users

4.3.2. Library services

Amongst the different services that libraries develop for their users, the survey demonstrates that the computerized catalogues and the OPAC are the most prevalent, with a rate of 44% and 25% respectively. This is followed by a rather weak percentage with similar results between the availability of full -text digital data (17%) and manual catalogues (14%) (Figure 6).

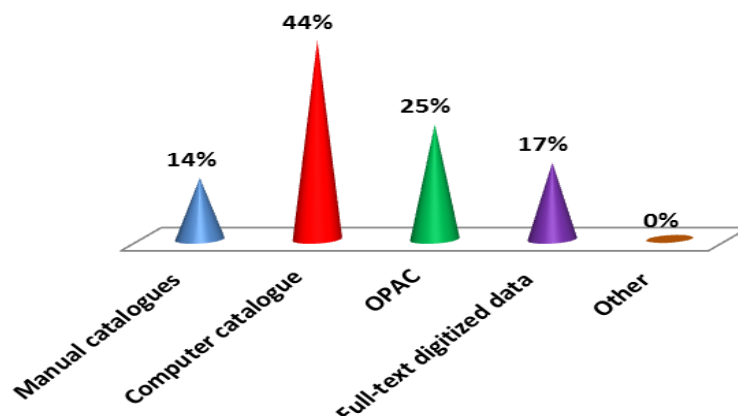


Figure 6: Library user services

4.3.3. ICT training

In the context of the organization of training sessions for users on the utilization of new information technologies, 67% of professionals affirm to being reasonably active in this professional activity.

The training sessions, such as access to databases, Web 2.0 tools and the OPAC are primarily directed at these professionals who are specialized in the library science and documentation sciences with a rate of 37% respondents following changes to information and communication tools.

In second place we have the training sessions organized for students (35%). These training sessions occur within the context of teaching the module dealing with research methodology for end-of-studies research projects (honors theses, PhD, etc.) (Figure 7). They are more oriented towards information retrieval and the exploitation of scientific documents.

We then have in third place, teaching and faculty staff (28%). The objective of these training sessions is to familiarize them with the different tools for accessing literature searches in order to make progress on their research projects.

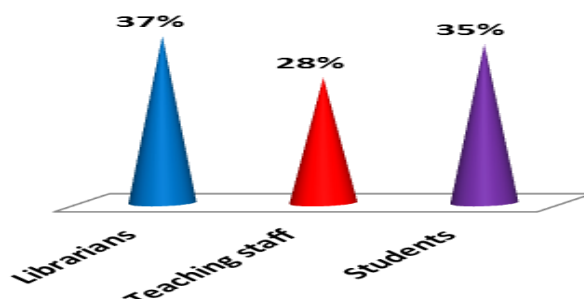


Figure 7: Distribution of user-oriented training sessions

It can be seen that there is certain awareness amongst professionals in the information and communication sciences in Algerian teaching and research institutions. In this way several workshops on collaborative work tools have been proposed to masters and doctoral students, to PhD graduates and to teaching staff. These tools include, notably, access to the Web of Science database allowing researchers to identify which academic articles are the most cited, and cited by whom.

These training sessions are also aimed at increasing awareness amongst students and teaching staff on how to interrogate different bibliographic and textual databases for the exploitation of scientific documentation. This change poses new challenges and we must from this point forward adapt to a more skilled utilization of ICTs for scientific research (ENSV, 2012).

In addition, we have Open Access training sessions in order become engaged with this communication tool, recognized for being indispensable in terms of knowledge archiving and sharing.

4.4. Digital evolution

4.4.1. Access to information from overseas

The analysis of our study data shows that 77% of librarians access information from overseas in the undertaking of their professional projects.

It can be noted that electronic journals are the most utilized (23%). After these come open archives and overseas databases with rates of 18% and 15% respectively.

Other access points are mentioned by librarians, such as the National Library of France (Bibliothèque Nationale de France (BNF)) and the University System of Documentary (Système Universitaire de Documentation (SUDOC)) with a rate of 16%. These two sources are utilized by professionals for the transfer of bibliographic records in the context of information processing and cataloguing operations.

By contrast, we note little interest concerning access to science events (9%), news (10%) and news notifications (7%) (Figure 8). This inevitably leads to an ignorance of current issues and events in science.

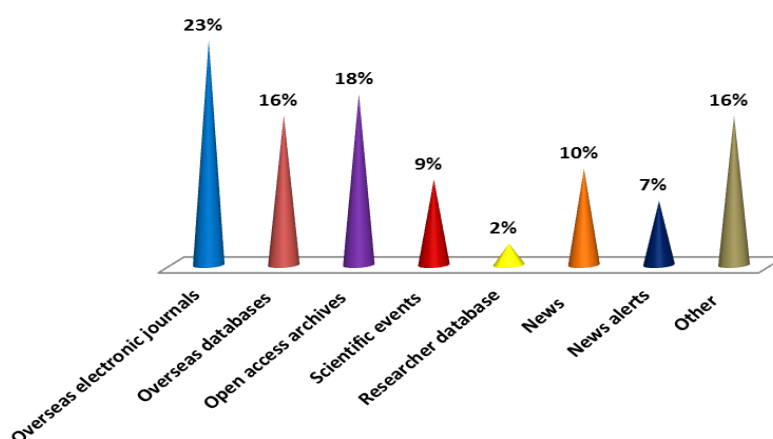


Figure 8: Types of access to international information

4.4.2. Access to collaborative platforms

In general, to achieve a result that involves a sharing of knowledge and skills we frequently need contact and exchange between professionals, using collaborative tools (chat, discussion forums, etc.) which can have an influence on the creation of socio-scientific and professional networks.

To this effect, the results of the survey illustrate that 63% of librarians have access to collaborative platforms for the expansion of and the undertaking of their professional tasks. The objective thus being to encourage better cooperation between librarians and documentalists on the international level to allow a transfer of knowledge and skills.

Concerning collaborative work tools for exchange and knowledge sharing, librarians place email in the top position with a percentage of 54%. This explains why the communication of documents for users is essentially based on email and on attachments.

This means of communication is thus utilized as a means of exchange and collaboration between two professionals. Poissonet (2000) states “email is based on a representation of exchanges as a singular meeting place of two subjectivities”. In this way it contributes to the structure of formal and/or informal networks by the constitution of a veritable virtual space for intellectual exchange.

Next come specialized discussion forums at 23%. These are also tools which encourage the belonging to virtual professional communities for collective shared exchange. We thus understand that Algerian information professionals are more or less interested in knowledge sharing tools.

By contrast, amongst the remote collaboration tools that professionals have little interest for, we note chat in the form of asynchronous collaboration (14%), videoconferencing (6%) and long distance learning (3%) (Figure 9). Even though these elements can have an effect on the creation of international socio-scientific networks. This neglect causes a weakness of internal and external

collaborative work between professionals in terms of knowledge and skills transfer.

Along the same lines and in the context of the Algerian Education Department's policy for the development of distance learning, an agreement was reached involving the mobilization of new technologies in telecommunications and remote-access computer networks to improve teaching quality and achieve a greater democratization of access to university. Amongst these techniques we see the appearance of e-learning platforms in order to encourage a collaborative learning experience which produces knowledge and skills that encourage a new form of production, transmission and sharing, through scientific blogs, weblogs, wikis, etc.

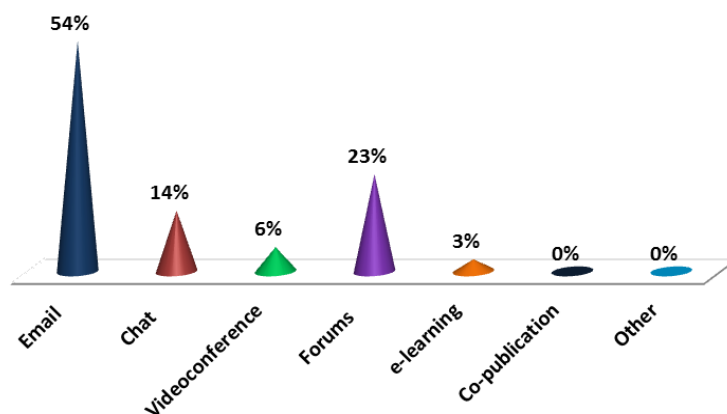


Figure 9: Types of access to collaborative platforms

4.4.3. Librarians' behavior in the digital age

Through this process of questioning we wished to understand the behaviors of librarians faced with the changes brought on by digital technologies. It appears that according to the data obtained, they are ready to familiarize themselves with this change through information and current issues in the ICT sector, and to retrain and adopt new information management and retrieval strategies.

A small minority (5%) of these professionals, however, suggested staying with traditional methods while adopting certain changes (Figure 10).

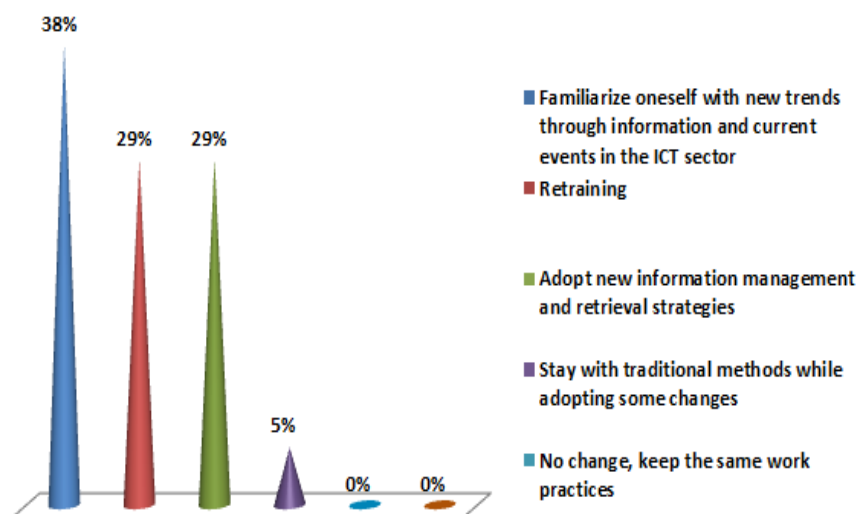


Figure 10: Behaviors of librarians in response to the digital era

4.4.4. Collaborative tools

A reading and analysis of the data obtained during our survey clearly shows that the most dominant elements of the collaborative tools most utilized by librarians are RSS feeds (53%) and wikis (25%).

This can be explained by the interest that professionals have for informative sites or blogs concerning RSS feeds (Rich Site Summary) such as newspaper and current affairs sites, sites of specialized journals and magazines, Usenet Newsgroups (discussion groups) and social bookmarking.

In regards to wikis, for their part they represent a rapid means of action through the existence of a website content management system, while allowing free access to changes and modifications by all visitors. Wikis are designed for professionals for all types of collaborative productions in a team and/or projects taking place in a network, sharing and capitalizing on information. As one example, we have “Wiki source” which is a shared website where each library can inform not only other libraries but the general public of its latest news and events.

Related to this, blogs are of average interest at 18%. Blogs allow the publication of articles called “posts” that appear chronologically and allow all readers to comment on the subject discussed, placing their reactions under the post, thus creating a favored relationship between the author and his/her readers.

This collaborative work tool is becoming more and more widespread in regards to communication with librarians under the name “Biblioblog” –librarian blogs, library blogs, documentalist blogs, centers for documentation blogs- which consolidate contact and interactivity between librarians and their professional partners. This will allow the establishment of a collaborative monitoring blog in information science, via RSS feeds.

These blogs can also be useful to librarians' professional associations and organizations to encourage exchange between professionals at a regional, national or international scale.

On the contrary, there is little interest (4%) in folksonomie (collaborative tagging) (Figure 11). This type of collaborative tool use is not really well known. Folksonomie is one of the flagship functionalities of Web 2.0. Its principle is to allow users to describe resources (blog posts, web pages, photos, videos, etc) with freely chosen keywords.

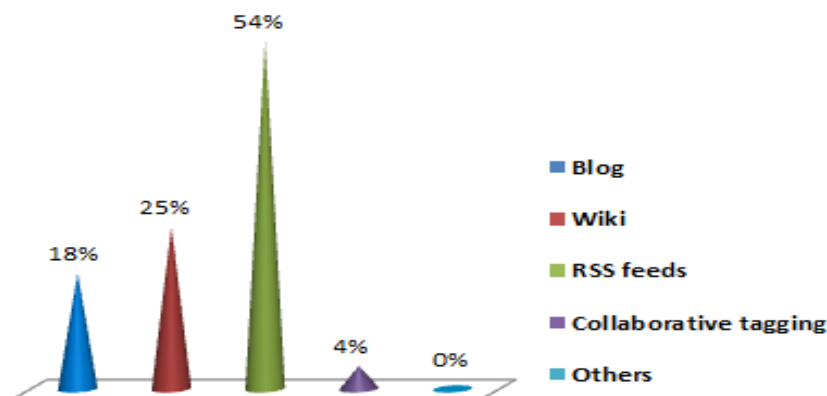


Figure 11: Use of collaborative tools

4.4.5. Methods of information exchange

The types of methods used to exchange information with the general public in different educational establishments are firstly traditional hard copy documents (39%), which is nearly identical to the use of electronic documents (32%). Email exchange represents only 24%.

On the contrary the use of forums is not considerable (5%) (Figure 12).

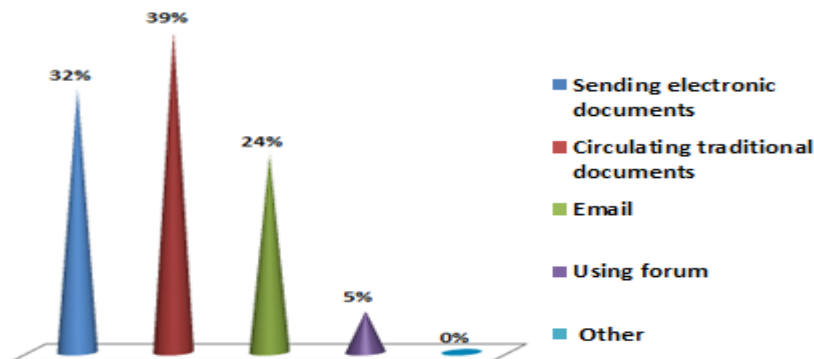


Figure 12: Ways of exchanging information with the general public

4.5. Digital technology and Algerian university libraries

All librarians affirmed that the integration of digital technology in their libraries better facilitated communication with the general public. According to their responses they emphasize the issue of access and open and free-cost consultation, the acquisition of information within a useful timeframe and the ease of remote consultation with downloading of full text articles.

These professionals are thus mainly favorable towards the advent of digital technologies in libraries, both for the rapid access it gives to users, and also for a way to attract a greater number of users.

In addition, 60% of librarians wish to operate in a digital-only environment and 32% prefer a hybrid situation (Figure 13).

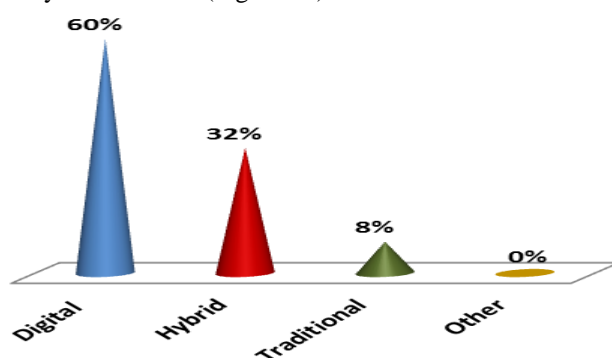


Figure 13: Type of preferred environment – information professionals

5. Conclusion

In conclusion, it can be noted that the interest in the collaborative communication space has prompted information professionals to have this strong tendency towards the collaborative tool process for knowledge and skills management, transfer and sharing. They more or less wish to create this community of shared and collaborative work between professional colleagues and partners in the field of library science and document sciences.

It is important to add that the term social network currently includes several websites, notably digital libraries. Through the years, websites evolve by offering new services. These services then become fixtures within the 'walls' of the digital library. It appears that a new digital presence is establishing itself - that of social networks (blogs, RSS feeds, Twitter and Facebook etc.) which allow the dissemination of information on current events and events taking place in libraries.

As some authors have explained, the principles of Web 2.0 have been compared to a new way of perceiving libraries, notably, by placing the user at the heart of its services and activities. The advantage to this is obvious - knowing which tools are utilized by users and offering them information via the same tools. This leads to better communication and collaboration with the library.

Reference can in fact be found in a review of relevant literature to "Library 2.0" in this sense; that other functionalities are being developed - information sharing

and dissemination platforms for establishing a network. We can cite examples such as Flickr, Youtube, Slideshare, as well as platforms allowing the organization of online resources, such as Netvibes and Delicious.

In the light of what has just been presented, we think it important to integrate this aspect of social networks for enhancing the value and visibility of digitalized scientific heritage.

To achieve this project, we hope to have the support of the University Agency of Francophone (Agence Universitaire Francophone) which is responsible for university-scientific cooperation, reflecting on the establishment of a training program for the ensemble of the libraries of the Algerian Higher Schools. This training program could be entitled “Digital libraries and information retrieval. Collaborative work environments and the Semantic Web”.

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