Online Library Tutorials in Mexican Universities: Presence and Characteristics

Introduction

University libraries have demonstrated that they play an essential role in helping institutions achieve their academic mission (Kuh and Gonyea, 2015), and not only by making collections available for teachers and students for their academic development, but also by developing instructional activities aimed at their users. These activities rely mainly on user training and information literacy programs. The first concept leads toward the use of library resources and services, while the second one has a wider objective and is related to the development of higher-order cognitive skills, such as recognition of information needs, their search, evaluation and their ethical and efficient use.

Since new educational models give more and more significance to the development of skills and abilities as well as to self-learning, having the necessary competencies to properly access and use information has become very important for students. However, it is common that newly enrolled students do not have these skills. Many of these students rely heavily on the Internet to look for any kind of information, especially on Google. They do not use appropriate specific information resources, do not formulate sophisticated search strategies, are not used to evaluate the credibility and reliability of the information found, and do not use that information in an ethical manner in their academic assignments (Noe, 2013; Taylor, 2012). Moreover, many students are not aware of and underuse library services and resources (Toner, 2008), particularly ethnic minorities (Green, 2012) and international students (Wang and Frank, 2002). This situation is reversible, since through an adequate training adapted to the particular features and needs of students, they may acquire the information and library skills necessary for their academic development. This explains why the instructional activities in university libraries became essential as time went by, currently being one of the most relevant and best valued services (Chen and Lin, 2011; Long and Schonfeld, 2014; Wolff et al., 2016).

From the early 90's, the channels available to teach this type of instruction expanded with Internet development. So, in addition to traditional face-to-face instruction, users now had online instruction, based on the student's self-learning

through training materials in the web, and blended instruction, which considered the use of electronic resources as a complement to face-to-face instruction. Currently, instruction through online tutorials has become popular in libraries, due mostly to the following reasons: it is as effective as face-to-face instruction, both in terms of learning as well as user preferences (Zhang et al., 2007); saves time for librarians, who have difficulties to teach more and more students with less resources (Adebonojo, 2011; Kraemer et al., 2007; Kratochvil, 2014); it reaches a greater number of students (Stiwinter, 2013); responds to the instructional needs of students enrolled in distance education, whose number has grown over the years (Pastula, 2010; Poe and Graham, 2006); and favors self-learning, since it allows training from any time and place (Palmer et al., 2012; Su and Kuo, 2010).

Online tutorials that have been created in libraries are very different and vary according to its purpose, subject treated, available resources for its elaboration, or to the public they are aimed at. As information technologies developed, these materials have evolved from simple linear applications, with text predominance and being slightly interactive, to sophisticated module systems, with plenty multimedia elements and more possibilities to interact with the tutorial (Fernández-Ramos, 2015). However, this evolution has not been the same among libraries, great differences exist in relation to the characteristics of each one and its organizational, economic or cultural circumstances.

Since there is little literature which analyzes online instruction in Latin America libraries and no specific study offering a global view of its introduction in libraries of Mexican Universities or the characteristics of the employed instructional materials, the objectives of this work are to assess how many libraries at public Mexican Universities have online tutorials on their websites to train their users, as well as to analyze the main characteristics of these instructional resources.

Literature review

The librarian and academic communities have a great interest in online information literacy and library instruction, shown by the huge amount of literature on the subject (Fernández-Ramos, 2016a). The majority of these studies deal with concrete initiatives in creating tutorials in some library, describing in detail the stages followed in its elaboration and the contents or software used (Noe and Bishop, 2005; Somoza-

Fernández and Rodríguez-Parada, 2011), however, we may also find in the literature few articles about creation guidelines for this type of materials (Koneru, 2010; Nagra and Coiffe, 2010; Rand, 2013), review of good practices (Dewan and Steeleworthy, 2013; Hess, 2013; Maddison, 2013), comparison of different types of tutorials (Baker, 2014; Craig and Friehs, 2013; Hahn, 2012; Turner et al., 2015), or studies regarding the effectiveness of this type of instruction compared to face-to-face instruction (Hess, 2014; Mery et al., 2012; Silk et al., 2015; Zhang et al., 2007).

Another type of study about online information literacy and library instruction, including this article, analyzes a group of tutorials with the purpose of evaluating their degree of development and main characteristics. For this type of analysis, a checklist is required to gather standardized information on their characteristics. These studies allow a general diagnosis of the group of tutorials analyzed as well as their trends, but also allow comparisons among tutorials to identify their strengths and weaknesses, detect good practices and propose improvement actions (Fernández-Ramos, 2015).

One of the first and most known studies of this type was performed by Dewald (1999) with the aim of evaluating to what extent online tutorials consider good practices identified on traditional library instruction: course-related, active learning, collaborative learning, media, objectives, concepts vs. mechanics, and librarian's help. In her study, 19 online tutorials previously selected by the Research Committee of the Library Instruction Round Table of the ALA were analyzed, proving that such good practices were not generally observed in those tutorials.

Later publications assessing online library tutorials are quite heterogeneous with respect to the characteristics analyzed and selection criteria for the tutorial sample that will be the object of study. Thus, we may find works which offer a general view of the main characteristics of tutorials; others focused on a concrete aspect, like interactivity or learning styles considered; analysis of a specific type of tutorials, like videotutorials; or studies that aim to describe tutorials elaborated in a particular geographic region or type of library.

Among the studies which analyze an extensive group of characteristics, slight variations in the number and type of items are observed. The issues most frequently analyzed are related to the topics, audience to which they are aimed at, format, degree of interactivity or technological issues. For instance, Anderson et al (2008a) evaluate 274 tutorials available in 124 medical library websites in the US, considering their topics, software used, audience, interactivity, presence of practice activities, feedback, and

presence of printable contents. This study was updated later (Anderson et al., 2008b), including a larger number of libraries in the sample, confirming a key result from the previous work: the limited interactivity of the tutorials.

Somoza-Fernández and Abadal (2009a, 2009b) assessed even more indicators, 30 and 36 respectively, related to general characteristics, content, educational features, browsing and design, and technological features. The first research analyzed 180 tutorials from several locations, the second focused on 72 tutorials available in university libraries located in Spain. Results in both studies showed significant deficiencies in the analyzed tutorials, leading the authors to conclude that this type of instructional material was at an early stage of development. This line of general analysis, considering a high number of indicators and a specific geographical region, also includes the work of authors like Cordes (2011), where 92 tutorials accessible on 16 universities in Australia and New Zealand are evaluated; Stubbings and Brine (2003) who study the characteristics of 21 tutorials from the UK; or Wickramanayake (2012), in which the instructional materials available on 14 websites of university libraries in Sri Lanka are assessed. These works show that analyzed tutorials are quite heterogeneous and, in general, they have significant deficiencies with respect to certain characteristics such as modularity, multimedia elements or practice activities.

A recurrent source used to identify examples of good practices and learn the most important trends about online library tutorials is PRIMO (http://primodb.org/), which emerged as a project of the ACRL Instruction Section's Emerging Technologies in Instruction Committee. This database gathers peer-reviewed instructional materials created by librarians that have been chosen based on their quality. The studies of Li (2011), Su and Kuo (2010) and Viggiano (2004) utilize this database to select the sample of materials to be analyzed and, as expected, results are better than in the abovementioned studies: a greater interactivity, modularity, variety of learning styles, or inclusion of multimedia elements are observed.

Due to the fast development and sophistication of tutorials, studies about them have to be more specific and concrete. For instance, those based on an in-depth analysis of a particular characteristic of tutorials, like interactivity (Koh and Herring, 2007; Somoza-Fernández, 2015), active learning (Hrycaj, 2005), learning styles (Laster et al., 2010), and technical characteristics (Yang, 2009; Yang and Chou, 2014), or studies focused on a particular type of instructional materials, like the ones evaluating

videotutorials (Majid et al., 2012; Mazzocchi, 2013; Obradovich et al., 2015; Tewell, 2010).

Methodology

Identification of libraries and tutorials

Since the proposed objectives were to assess the presence of online library tutorials in the libraries of public universities in Mexico and later analyze the main characteristics of such tutorials, the first step was to identify Mexican public universities, then their libraries and finally the tutorials. The Directory of Public Institutions of Higher Education in Mexico, elaborated by the Secretariat of Higher Education[1], was consulted. This directory contains a total of 848 different institutions (universities, institutes, research centers) grouped in 10 categories, as per their administrative branch and disciplinary nature. This investigation selected 230 institutions included in the 6 categories corresponding to universities: federal public universities, state public universities, state public universities with solidarity support, polytechnic universities, technological universities, and intercultural universities.

The website of each one of these universities was accessed searching for the central library website and, if there were any, library websites of faculties, departments, or other university branches (from now on, referred as "branch libraries"). From the 230 universities identified in the Directory of Public Institutions of Higher Education in Mexico, only 102 (44.3%) had a central library with a website of its own. From these 102 universities, 10 also had branch libraries with their own websites. In total, 279 libraries with a website of their own were located: 102 central libraries and 177 branch libraries.

Once all libraries having their own website were identified, we searched for online library tutorials offered to their users. This study analyzed the tutorials which fulfilled the following inclusion criteria:

- Must be accessible from the library website, may be elaborated by the library or created by third parties.
- Must have free access, no password needed for consultation.
- No restrictions with respect to format or language.

[1] http://www.ses.sep.gob.mx/instituciones.html

- Tutorial content must be oriented to user training. Therefore, descriptive guides of the library and its collections were excluded, since their purpose is to divulge not instruct.

Data collection and analysis

After the online library tutorials were identified, information about their characteristics and distribution among the analyzed libraries was collected during October and November, 2015. To achieve this, a data collection template was designed. It included the main characteristics evaluated in similar studies (Anderson et al., 2008a; Cordes, 2011; Dewald, 1999; Li, 2011; Somoza-Fernández and Abadal, 2009a, 2009b; Su and Kuo, 2010). Characteristics must also be valued objectively, thus excluding such as "simple language" or "attractive design", which had a significant subjective component. The items of this template were grouped in 4 sections: general information, presentation, content and active learning. Table I shows the template, in which, besides the name of each item, the way information was coded is observed.

Insert Table I

Once data for each tutorial was collected, it was compiled in a Microsoft Excel spreadsheet, free text data was standardized, like "specific topic" or "format", to then proceed with the quantitative analysis of all data. This analysis was mainly descriptive, to obtain frequencies and percentages, and additionally, correlational, among the most significant variables. In order to analyze the presence of tutorials in libraries, the total number of tutorials to which libraries gave access was calculated. To assess their characteristics, duplicate records were eliminated, since several libraries had links to the same third party materials.

Results

Presence of online library tutorials in libraries

The presence of online library tutorials in the library websites evaluated is quite limited, since only 81 (29.2%) of the 279 libraries analyzed offer their users some type of tutorial. However, we should point out that in this respect there is a significant difference between central libraries (40 of 102, 39.2%) and branch libraries (41 of 177,

23.2%), although the percentage is very low for both cases. Considering the origin of tutorials, a big difference is also observed: while most of the 40 central libraries provide a tutorial of their own (77.5%), in the 41 branch libraries this percentage is much lower (36.8%). In fact, 63.4% of branch libraries only give access to tutorials created by third parties.

Regarding the number of online library tutorials offered by the libraries to their users, the average is 7 tutorials per library (9.9 for central libraries and 4.2 for branch libraries), having a significant higher number of third party tutorials than tutorials created by the libraries (mean of 4.7 compared to 2.2). Nevertheless, the idea of these average values being representative should be considered with caution, since data shows a big dispersion and there is an elevated heterogeneity among libraries. Generally, in both, central libraries as well as branch libraries, a distribution is observed where the majority of libraries provide 1 or 2 tutorials and a few others offer many. So, from 81 libraries included in the study, the 12 libraries with the higher number of tutorials give access to 61% of these, 9 are central libraries and 3 are branch libraries.

This data dispersion is emphasized even more taking into account the origin of the tutorials. For third party tutorials, the extreme values are between 0 and 70, with 8 libraries monopolizing 65.4% of these tutorials; while tutorials created by the libraries have values ranging from 0 and 20 materials per library, with 8 libraries giving access to 56% of these tutorials.

Table II shows the number of online library tutorials in several types of libraries (central / branch) considering the origin of the tutorials (elaborated by the libraries / third party).

Insert Table II

Characteristics of tutorials

Once the 198 duplicate tutorials were eliminated, from which half had been created by other libraries, the characteristics of the remaining 364 single tutorials were analyzed: 180 created by the libraries and 184 third party tutorials. Results of such analysis are shown below, organized according to the 3 main characteristics taken into account: content, presentation and active learning.

Content

In general, the most frequent topic (64.3%) of evaluated tutorials is the use of specific products of information to which libraries have subscriptions, like databases, digital libraries or collections of online scientific journals. Whereas the percentage of tutorials aimed at the use of library services or training in information competencies is significantly lower (26.6 % and 9.1% respectively). However, important and subtle differences can be observed depending on the origin of these tutorials: in those created by the libraries, the main topic is the use of library services (53.9%), followed by the management of specific products of information (33.9%), and information literacy (12.2%). On the contrary, third party tutorials are focused mainly on the management of specific products of information (94%) and a few cases on information competencies (6%).

As Table III shows, a detailed analysis of the tutorial topics, indicates that the library services most frequently dealt with are the use of the library digital collections, the catalog, renewal, remote access, use of the institutional repository, borrowing, and book reservations. Obviously, since these tutorials are focused on the use of services of each library, those have been created by them. About the specific products of information, almost all third party tutorials have been elaborated by the manufacturer itself, the majority use English, and discuss the management of databases and digital libraries of big information suppliers, like Ebsco, Springer or Emerald. In the case of tutorials created by the libraries, these deal with less known products or known locally (Ecest, Conricyt…). The few tutorials available on information competencies mainly discuss a particular competency or a couple of them, being the ethical use of information and information search the most frequent ones.

Insert Table III

As to the age of the tutorials, considering their date of creation or, in its case, update, the average value is 2.8 years in general, 3.2 years for resources created by the libraries and 2.5 for third party tutorials. However, we should point out that these results have been determined on a large extent by few older tutorials (more than 10 years) which led to pretty high mean values. In fact, 2014 is the year with most tutorials of both types being created or updated.

The language used in a 100% of tutorials created by the libraries is Spanish, as expected, since it is the official language in Mexican universities. For third party

tutorials, the general trend is that libraries have links to tutorials in Spanish mainly (73.4%), although a high percentage of tutorials in English (26.6%) are also observed, in the most part, those about the use of specific products and elaborated by the suppliers.

Presentation

The predominant formats in the analyzed tutorials, either those created by the library or by third parties, are pdf (44%), video (30.2%) and ppt (11%), which influence to a great extent the mode of presentation of the information. So, as it may be observed in Table IV, the most common mode of presentation of the information is the combination of text and image (62.2%), because of the high number of resources in pdf and ppt, followed closely by the combination of text, image and sound (21%), frequent on videos. The html format, which may include cgi scripts to achieve some interactivity and modularity, has been used in few tutorials (8.2%), explaining why the structure of the information in the analyzed tutorials is mainly linear (92.3%). Only a limited number of tutorials with a modular structure are found.

The average duration of videotutorials is 5'44'', being somewhat longer in third party tutorials (6'42'') than in library tutorials (4'35''). This duration, that may be considered a bit long, is explained in part by the presence of a few videotutorials with a modular structure composed by several videos. The extension is calculated only in pdf and ppt formats, with mean values of 30 pages or slides.

Insert Table IV

Generally, no big differences between tutorials created by the libraries and third party tutorials are observed with respect to the formats, mode of presentation, and structure. Although in the materials created by the libraries, there are a higher number of html documents, and in third party materials more combinations of text, image and sound are seen. Analyzing the format, important differences do emerge relating to the topic of tutorials, showing a very significant correlation between both variables (χ^2=124.69; p-value <0.001). In tutorials about information literacy, the most common format is html (54.5%), since it allows a greater versatility and interactivity, needed to teach more complex concepts and skills than the use of a service or resource. On the contrary, tutorials about library services use pdf and video formats much more (49.5%

and 28.9%, respectively). This is the case also for tutorials on specific resources where pdf is used on 43.6% of them and video on 33.3%. Whereas the html format is almost not employed in tutorials regarding library services or specific resources (11.1% and 0.1%, respectively).

Concerning the inclusion of pedagogical elements in tutorials that promote learning, most include highlights to indicate the main aspects, both in tutorials created by the libraries (63.9%) as well as in third party tutorials (82.6%). In contrast, the inclusion of a section specifying the objectives of the tutorial or a brief introduction of its content is less frequent, present only in 30.6% of tutorials created by the libraries and 36.1% of third party tutorials.

Active learning

The presence of active learning elements in the analyzed tutorials is fairly limited and conditioned to pdf and video formats since these are the most frequent. As Figure 1 shows, from the 4 elements considered in this study, only the inclusion of simulations or examples is observed extensively in the tutorials evaluated, with a percentage of 75% in the tutorials created by the libraries and 88.4% in third party tutorials. However, the possibility to receive feedback or support from the staff responsible of tutorials is considered in few cases (31.7% in tutorials created by the libraries and 14% in third party tutorials), and the inclusion of exercises, tests or quizzes is merely anecdotal, with percentages not higher than 10% for tutorials created by the libraries and 2% for third party tutorials. It is not surprising that these two last elements appear mainly in html materials, since pdf, ppt and video formats are not suitable for this type of functionalities.

Insert Figure 1

Discussion

Results from this study should be evaluated keeping in mind that only freely accessible tutorials have been analyzed, and that the sample does not include research center libraries, which in some cases fulfill instructional activities also. Even with this limitation, the results from this study offer a fairly representative general view of the presence and characteristics of online library tutorials in the libraries of public

universities in Mexico. In general, these tutorials could be considered quite diverse and slightly developed. This circumstance may be due to the uneven, and usually, limited development of the library websites of Mexican universities (Fernández-Ramos, 2016b), demonstrated by the fact that only 44.3% of the universities assessed have a library website.

The percentage of university libraries in Mexico with a website offering any type of tutorial is quite low (29.2%), especially compared to results of studies in other countries carried out years ago. In the US, several similar studies have been carried out in different types of libraries and percentages found have been much higher. Ten years ago, two studies assessed the presence of tutorials in the ARL websites obtaining a percentage of 55% (Detlor and Lewis, 2006; Hrycaj, 2005); Anderson et al. (2008a) showed that in 2007, 63% of libraries of the Association of American Medical Colleges had a link to an external tutorial and 59% of them had created a free access tutorial; furthermore, in 2008, libraries with a link to an external tutorial increased to 79% and libraries with free access tutorials to 66% (Anderson et al., 2008b); the studies performed on a sample of university libraries gathered from the Peterson's Four-Year Colleges Directory indicated a significant presence of tutorials, 49% in 2009 (Yang, 2009) and 64% in 2012 (Yang and Chou, 2014). The analysis of university libraries in Italy (Renditiso, 2011) and Spain (Somoza-Fernández, 2015) also showed much higher percentages for the presence of tutorials than Mexico, with 60% and 78%, respectively.

The distribution of tutorials in the libraries agrees with what is seen in other studies (Somoza-Fernández, 2015; Somoza-Fernández and Abadal, 2009b) in the sense that a small number of libraries group the majority of tutorials. This fact may be explained by the vast differences among libraries, both in their ability to create tutorials as well as in the characteristics of their collections. Most tutorials found have been created by sellers or distributors of databases and information platforms, so only libraries which have a subscription to these bases and platforms offer access to these tutorials.

In relation to the topics, it is surprising the limited number of tutorials aimed at the instruction on information competencies, i.e., tutorials which deal with the main concepts of search, evaluation, organization and use of information. This result is unexpected since the percentage of libraries which offer face-to-face instruction on information competencies is higher nowadays, and the interest on information literacy in university libraries in Mexico has increased little by little (Uribe-Tirado, 2012). In

this study, it could be inferred that these libraries prefer the use of online tutorials for instruction on more concrete and detailed topics, as the use of specific resources or library services (more than 90% of the tutorials analyzed), and leave face-to-face instruction for topics that require more cognitive tasks. It should be kept in mind that this work only evaluated freely accessible tutorials, it could be possible there are other tutorials integrated in specific subjects with no free access. Furthermore, no surprises are seen regarding the particular topic of tutorials, specific resources or library services, these results agree with those of the studies mentioned before (Somoza-Fernández, 2015; Somoza-Fernández and Abadal, 2009b; Yang, 2009; Yang and Chou, 2014).

The predominant format in the assessed tutorials is pdf, which is very limited in its support of user interaction, fully explaining the results obtained on the linear structure of tutorials and the insufficient presence of active learning elements. Whereas in other studies the predominant format is ppt (Somoza-Fernández and Abadal, 2009b), also inadequate to incorporate active learning elements, html / flash (Anderson et al., 2008a), which allows the introduction of more active learning elements, or video (Yang, 2009; Yang and Chou, 2014), which is gaining popularity for its convenience and visibility. However, it must be considered that the video relegates the user to a passive role, is difficult to locate a concrete section of the content, or try to follow the steps described while watching the tutorial (Mestre, 2012a).

The extension or duration of analyzed tutorials may be considered too long, with pdfs and ppts of approximately 30 pages and videos of almost 5 minutes. Scientific literature indicates that students do not wish to employ more time than necessary to complete a tutorial, expecting it would not be as long and deep as a textbook, (Lim, 2010; Moyo, 2011; Weiner et al., 2012). In this sense, Baker (2014) advises videotutorials should not extend over 3 minutes and Mestre (2012a) points out that "breaking down instruction tutorials into manageable sections (modules), while remaining linear and allowing for the step-by-step acquisition of skills, prevents the user from becoming overwhelmed with information. Studies have shown that making short segments instead of longer videos or tutorials helps students learn better and reduces the effort it takes for them to process information".

Finally, it is demonstrated that interactivity and active learning elements in the analyzed tutorials are very limited and in most cases it just involves some examples or an e-mail address to solve questions. This lack of interactivity (exercises, tests, etc) is not only observed in university libraries in Mexico, it is a common result in the majority

of studies about this topic (Anderson et al., 2008a, 2008b; Somoza-Fernández and Abadal, 2009b). However, this characteristic has been pointed out in several articles as being of vital importance (Dewan and Steeleworthy, 2013; Mestre, 2012b; Oud, 2009), since it allows the student to put into practice his/her knowledge and skills, receive guidance, as well as control and evaluate his/her own learning.

Conclusions

In recent years, the use of the web for library and information literacy instruction became popular in university libraries, although not in a homogeneous and generalized way since every library has its own characteristics, resources and priorities. In the case of Mexico, from the results obtained in this study we can conclude that, in general, there are not many online tutorials present in university libraries and those available are clearly subject to improvement. However, the current study offers the first general diagnosis that should be expanded in the future to deeply understand the situation and evolution of online library instruction in Mexico and Latin America. To achieve this, more studies performed in other libraries will be necessary, as well as to consider other characteristics of tutorials, find out how and when tutorials are used, and know the preferences and opinions of users about different procedures to teach library and information literacy courses.

On the other hand, it should be emphasized that this overview is completely diverse and conditioned to the fact that universities have great differences between them, which is also reflected in their libraries. Whereas some universities, like the National Autonomous University of Mexico (UNAM), have more than 130 libraries and more than a 1,000 employees, other recently created universities do not have sufficient library staff or even have a library website. This circumstance has a definite impact on the ability of each library for creating online library materials to instruct its users, however, more studies aimed at finding out other possible factors that explain these differences among libraries are needed. In this respect, feasible suggestions may be to deal with the libraries' point of view about the suitability of this type of training in each of them, limits and difficulties they face, as well as reasons why they offer or not online training materials to their users. One more advice for subsequent studies could be to analyze more deeply the relation between the characteristics of the tutorials with other variables, such as the topic at hand or the characteristics of the library and its users.

The online approach could save time for librarians in the long term, besides it gives them the advantage to reach more students and promote self-learning among them, including those in distance education. In spite of these benefits, time, knowledge and sufficient means are required to be able to develop online tutorials. For libraries with fewer resources, strategies exist so they may offer online tutorials to their users, for instance, provide links to good quality tutorials developed by third parties and which are freely accessible on the internet, or collaborate with other libraries in the creation or adaptation of tutorials.

In a changing world influenced more and more by technology, where educational models are transforming towards student's self-learning and where people use the internet much more to search for information and learn, libraries should make an effort to offer their services through the web, including library instruction. However, for this instruction to be effective, good quality instructional materials should be used. As Zhang (2006) points out, turning traditional text-heavy instruction materials into digital formats is not enough, the characteristics of online instruction and digital educational resources have to be considered, so library and information literacy instruction may benefit from all the possibilities offered by information technologies. In this sense, as it has been shown in this study and others, there still is a long way to go. It is necessary to improve the characteristics of most existing tutorials and create high-quality materials.

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General information	
Title	Title of the material
url	
Library/Libraries	Which libraries give access to that resource?
Producer	Which library, institute or organization created the material?
Content	
General topic	Library services / specific resources (databases, software…) / information literacy in general
Specific topic	Free text
Date	Date of last update
Language	Could be more than one. Example: English video with Spanish subtitles
Presentation	
Format	Video, pdf, ppt, based on html…
Duration/extension	Minutes, number of pages…
Presentation mode	Text / voice / images Could be more than one
Structure	modular/linear
Highlights (text balloons, arrows…)	Yes/No
Objectives/introduction	Yes/No
Active learning	
Simulations/examples	Yes/No
Questions/exercises	Yes/No
Final test/quizzes	Yes/No
Feedback (contact with the librarian)	Yes/No

Table I: Data collection template

	Central libraries	Branch libraries	Total
Number of libraries with online library tutorials	**40 (39.2%)**	**41 (23.2%)**	**81 (29.2%)**
Libraries with tutorials created by the libraries and third party tutorials	13 (32.5%)	6 (14.6%)	19 (23.5%)
Libraries with only tutorials created by the libraries	18 (45%)	9 (22%)	27 (33.3%)
Libraries with only third party tutorials	9 (22.5%)	26 (63.4%)	35 (43.2%)
Number of online library tutorials	**392 ($\bar{X}$=9.9)**	**170 ($\bar{X}$=4.2)**	**562 ($\bar{X}$=7)**
Created by the library	110 ($\bar{X}$=2.8)	70 ($\bar{X}$=1.7)	180 ($\bar{X}$=2.2)
Created by a third party	282 ($\bar{X}$=7.1)	100 ($\bar{X}$=2.4)	382 ($\bar{X}$=4.7)

Table II: Presence of instructional materials in libraries

	Tutorials created by the library	Third party tutorials	Total
Library services and tools	**97 (53.9%)**	**0 (0%)**	**97 (26.6%)**
Digital library	25 (25.8%)		25 (25.8%)
Catalog	19 (19.6%)		19 (19.6%)
Services (in general)	12 (12.4%)		12 (12.4%)
Renewal	11 (11.3%)		11 (11.3%)
Remote access	3 (3.1%)		3 (3.1%)
Institutional repository	2 (2.1%)		2 (2.1%)
Borrowing	2 (2.1%)		2 (2.1%)
Reservations	2 (2.1%)		2 (2.1%)
Other services	21 (21.6%)		21 (21.6%)
Specific resources	**61 (33.9%)**	**173 (94%)**	**234 (64.3%)**
Ebsco	4 (6.6%)	13 (7.5%)	17 (7.3%)
WOS	1 (1.6%)	13 (7.5%)	14 (6%)
Springer	1 (1.6%)	11 (6.4%)	12 (5.1%)
Emerald	1 (1.6%)	10 (5.8%)	11 (4.7%)
ScienceDirect	4 (6.6%)	6 (3.5%)	10 (4.3%)
Mathscinet	1 (1.6%)	8 (4.6%)	9 (3.8%)
BioOne	1 (1.6%)	7 (4%)	8 (3.4%)
Annual Reviews	1 (1.6%)	7 (4%)	8 (3.4%)
Ecest	4 (6.6%)	2 (1.2%)	6 (2.6%)
Conricyt	3 (4.9%)	2 (1.2%)	5 (2.1%)
Other (Proquest. Dialnet. OECD. Ovid. Scopus…)	40 (65.6%)	74 (42.8%)	134 (57.3%)
Information literacy	**22 (12.2%)**	**11 (6%)**	**33 (9.1%)**
Ethical and effective use	11 (50%)	8 (72.7%)	19 (57.6%)
Search	10 (45.5%)	2 (18.2%)	12 (36.4%)
Evaluation	4 (18.2%)	1 (9.1%)	5 (15.2%)
Organization	4 (18.2%)	0	4 (12.1%)

Table III: Content of online library tutorials

		Tutorials created by the library	Third party tutorials	Total
Format	Pdf	72 (40%)	88 (47.8%)	160 (44%)
	Video	50 (27.8%)	60 (32.6%)	110 (30.2%)
	Ppt	20 (11.1%)	20 (10.9%)	40 (11%)
	Html	26 (14.4%)	4 (2.2%)	30 (8.2%)
	Others	12 (6.7%)	12 (6.5%)	24 (6.6%)
Duration /average extension	Video	4’35’’	6’42’’	5’44’’
	Pdf	29.1 p.	30.8 p.	29.5 p.
	Ppt	11.1 s.	35.2 s.	28.9 s.
Mode	Image	2 (1.1%)	2 (1.2%)	4 (1.1%)
	Text	26 (14.4%)	7 (4.1%)	33 (9.4%)
	Image & voice	18 (10%)	4 (2.3%)	22 (6.3%)
	Image & text	110 (61.1%)	109 (63.4%)	219 (62.2%)
	Image, text & voice	24 (13.3%)	50 (29.1%)	74 (21%)
	Collection of links	0	12 (6.5%)	12 (3.3%)
Structure	Linear	161 (89.4%)	176 (95.3%)	337 (92.3%)
	Modular	19 (10.6%)	8 (4.7%)	27 (7.7%)

Table IV: Presentation of online library tutorials