

Evaluation of Specialized Virtual Health Libraries in Scholar Education

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Abstract:- The aim is to evaluate the impact on academic training with specialized virtual health libraries (databases and catalogs) available in Institutions of Scholar Education, because there is uncertainty about the appropriate use of these libraries. The research was conducted on the databases available on 2 universities during the academic period August 2015 - February 2016. Using criteria and indicators for evaluating virtual libraries, model quality of university libraries based on fuzzy techniques, Bibliometric and criteria for virtual libraries in health. The study had the participation of 188 students from two universities or groups. The research reveals that for the first group and the second group almost always (60.45%) find the information, the (57.2%) have relevance to the topic, access (45.8%) once a month, and Elseiver and BiblioMedica are the most commonly used, however, mostly ie (78.55%) use traditional libraries versus (58.2%) which are virtual. Descriptive analysis was performed using the software SPSSv20. This experience allows us to confirm that the use of libraries contributes discreetly in academic education, therefore, it requires training plans, reference guides, strengthen the socialization of this resource, free access from anywhere.

Keywords:- Virtual Libraries, Health, Evaluation, Scholar Education.

I. INTRODUCTION

At present our country is in a process of transformation and improvement of higher education, continuously demanding to each of the universities the fulfillment of certain indicators through the evaluation and accreditation of universities and careers whose regulatory organization is the Consejo de Evaluación, Acreditación y Aseguramiento de la Calidad de la Educación Superior (CEAACES), with a website <http://www.ceaaces.gob.ec>, which should have an impact on educational quality.

To enter to this process of change during the last five years the Ecuadorian State has invested a significant amount of economic resources in the educational issue, as described in Table 1.

Table 1. Budgets in Higher Education

Years	Economic amount USD	Analysis periods
2012	2.777,40	
2013	3.229,30	2013 – 2012
2014	3.724,10	2014 – 2013
2015	3.778,60	2015 – 2014
2016	4.291,30	2106 – 2015

These important allocations of resources are destined for investments in physical infrastructure, furniture purchasing, laboratories equipment, literature and bibliography purchasing, systematization of information, and mainly for the acquisition of computer systems and data bases of libraries for the use of the State Universities.

1.1. Justification/Problem

In the virtual libraries of the Higher Polytechnic School of Chimborazo (ESPOCH), <http://bibliotecas.epoch.edu.ec/bdatos.html> and the National University of Chimborazo (UNACH), <http://www.unach.edu.ec/bvirtual/index.php/base-datos-cientificas>, there are a large number of scientific databases and bibliographic catalogs that can be consulted, but in the presence of certain problems such as: lack of appropriate knowledge of access and use by users (teachers, students, researchers) to appeal to these online resources, lack of motivation to use the different search methods, non-existence of a virtual library service with free access from the external zones of universities because only access is allowed through the internal network

of educational centers, free and complete document viewing and download of documents, resistance of teachers who mostly use the traditional teaching system.

All of this leads to an uncertain thought whether these resources are contributing positively to the training of students in higher education institutions, in addition, the lack of reliable evaluation tools and that are implemented under international policies or standards that facilitate decision making are evidenced. Therefore a prototype of a survey is created that tries to collect a set of indicators to evaluate the effectiveness of virtual libraries specialized in health and above all recognize the contribution in the training of students.

1.2. Review of the literature

Virtual library

The digital or virtual library forms a virtual space, which links and shares many resources and maintains the specific functions of a systematized collection of documents, in this case digital, with the flexibility provided by the use of information and communication technologies (ICT), and provides the conditions for networking. [1]

Virtual library in Health

The virtual library in Health arises in the evolutionary process of Internet from the development of the digital libraries. It is a project that is based on the VI Meeting of the Latin American System of information in Health Sciences, in March 1998, and is defined as a network of information management, knowledge exchange and scientific evidence in health, establishing through cooperation between institutions and professionals in the production, intermediation and use of scientific information sources in health, through open and universal access. [2]

Criteria and indicators for evaluating virtual libraries

The research work of [3] mentions that since the 1990s, digital libraries have become the recurrent example of librarian services and systems, whereby multiple initiatives have been developed and refined through products and digital services, as well as various collaborative societies focused on reusing and sharing knowledge.

It is worth mentioning that the implementation of this type of bibliographic systems is extremely complex, due to the requirement of a set of requirements, most of which are closely related and are derived from the ICTs, among which are: The design and implementation of a database system, supported in an open platform with standards that allow its interoperability with other systems. The development of a friendly graphical interface in which the internal processes become transparent for the user. The development of a security system that guarantees the integrity of resources and services.

Although there are several models, methodologies, tutorials and guides, to design and implement services and products for the web. Most of them are based on proposals of information architecture and usability, which indicates the steps that go from the study of the user community to the technological implementation, adding to this the organization of information and graphic design of the interface. It is remarkable as mentioned [4], the evaluation proposals are not very abundant in this field. Numerous research studies and practical efforts have been carried out, but evaluation is rarely part of them. In practice, the community concentrates on creating and maintaining the services offered to users, so the approximations made have little research.

Model of quality evaluation of university libraries

In the research article "A model for assessing the quality of digital university libraries based on diffuse techniques" [5], presents a model that contains both objective and subjective criteria, which can be weighted, user-oriented, and use diffuse linguistic techniques to obtain quality values. Divided in:

An evaluation scheme: Contains quality indicators, both objective and subjective. This environment contemplates the first level and the second level, in turn the second level is subdivided into 4 categories. For our study, this evaluation scheme is considered because it is composed of quantitative and subjective criteria, in particular attention to those that serve to observe the behavior of the users or to collect their opinions or value judgments. First level - objectives: the indicator is selected (access to databases, consultations and to measure the external visibility of the library). Second Level - subjective: we get directly from the opinions provided by the users about the operation of the system. Of the Intrinsic category: the quality of precision of the university libraries is measured in terms of whether or not users find what they are looking for; therefore, the qualitative indicator is defined (find what you are looking for). Contextual category: to assess information aspects from a task perspective, the indicators (satisfaction level, it presents value added utilities, coverage on the subject sought among others) are considered. From the category Quality of representation: the following criteria (the comprehensibility of the digital library and the information received) are collected.

In respect of the evaluation of virtual libraries in this work, the quality indicators (which is characterized by the importance of the content), the coverage or visibility of documents, with the exception of the impact indicator (influence of the publication) that could well be evaluated technically based on the number of citations, are considered suspiciously, however, it is left as a concern for analysis in another section in better detail through the indicators of Bibliometrics. [6] An important aspect to mention is that the boom of such libraries is not new in the educational community and that any model of evaluation does not contribute to a valid approximation, but is necessary. So this paper aims to collect a set of indicators to evaluate this type of bibliographic resources. Although in reality, a full evaluation must consider the costs and benefits, these will not be treated, because the present proposal has as main focus the acceptance and training of the students.

1.3. Purpose

- To obtain a clear idea of whether virtual libraries are contributing to the training of students in higher education centers.
- To conduct an assessment of the current situation, about knowledge, access to searches and use of libraries.
- To recognize methods of accessing and searching for bibliographic information.
- To develop training plans and reference guides to improve the skills and abilities of access, search and retrieval of information.

1.4. Hypothesis

Do the specialized virtual health libraries (databases and catalogs) available in Higher Education Institutions have a positive impact on the academic training of students?

II. APPLIED METHODOLOGY

A descriptive study was carried out during the academic period August 2015 - February 2016. For this a survey was applied considering the criteria and indicators to evaluate the virtual libraries, the evaluation model was based on the evaluation of the quality of the university digital libraries based on diffuse techniques. In addition, one of the main and recognized works was considered to evaluate bibliographical sites like Bibliometric available in SCOPUS. Finally, it is considered the criteria of the study on Virtual Library in Health [7], because in Ecuador there is little information.

2.1. Description of participants

The study population consisted of 188 randomly selected students from 2 universities or groups, with a total of 99 students belonging to the Faculty of Public Health (ESPOCH), where 42% belonged to Medicine, 30% to Nutrition and Dietetics and 28% to Health Education, while the 89 correspond to the Faculty of Health Sciences (UNACH), being 43% from Medicine, 31% Dentistry and 29% Nursing, students were selected from these careers because they belong to the same area of knowledge and the main interest in this case are health issues.

2.2. Instruments

- A survey questionnaire.
- Google drive forms.
- EZAnalyze
- SPSSv20 statistical software

2.3. Process

The first step was to structure a survey based on the methodology and the criteria and indicators to evaluate the virtual libraries mentioned above.

The survey questions were based on Likert scale in a range of 5 for their evaluation (Table 2), the survey consisted of 11 items and two of them with 4 and 8 subitems each, articulated around the indicators of research.

Table 2: Weights for the evaluation of surveys

Scale	Interpretation	Weight
Totally agree	Total Acceptance	5
Agree	Accordance	4
Neither agree nor disagree	Neutral	3
In disagreement	Disagreement	2
Strongly Disagree	Indicates total rejection	1

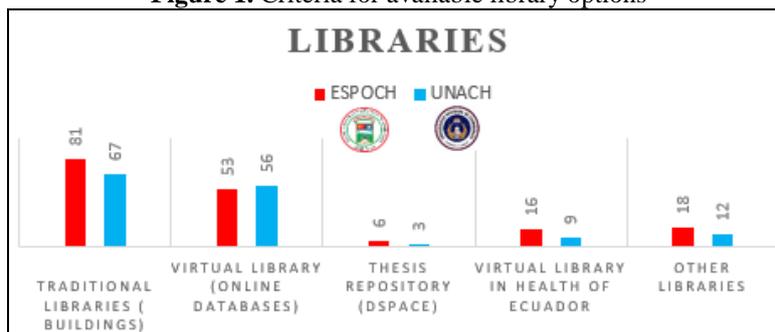
Once the survey was organized, they were designed and published on the Google Drive platform for data collection. The survey was applied in the students of the two educational centers at the same time of the investigation, for the tabulation and analysis of the individual results, the EZAnalyze complement was used as a data processing tool, while for the overall assessment the T-Student statistic for a sample [8]. Finally, in order to analyze the hypothesis, the product database of the survey is imported into the statistical software SPSSv.20.

III. RESULTS

For this section the most relevant results of each group are presented:

- Users' opinions on the different Libraries options they use.

Figure 1. Criteria for available library options



The previous figure reveals that for the first group (ESPOCH) the 81.8% uses traditional libraries (facilities and physical books), compared to 53.5% that uses virtual libraries. Whereas for the second group (UNACH) 75.3% uses traditional libraries, and 62.9% uses virtual libraries.

- Users' opinions on frequency of visits to the Virtual Libraries.

Table 3. Test of frequency of access to virtual libraries

Ítem	Options	ESPOCH	UNACH	Average
How often do you visit the Virtual Library?	1 to 3 days per week	22.20%	36.00%	29.10%
	4 to 7 days per week	13.10%	4.50%	8.80%
	Once a month	44.40%	47.20%	45.80%
	Every 6 months	7.10%	4.50%	5.80%
	Never used	13.10%	7.90%	10.50%
Total		100%	100%	100%

The above chart reveals that for the first group 44.40% visits virtual libraries with a frequency of once a month, while for the second group an average of 47.20% is obtained, and a total average of 45.80% for both groups.

- Users' opinion on whether they found the information they were looking for.

Table 4. Test of of availability of information

Item	Options	ESPOCH	UNACH	Average
Did you find the information you were looking for?	Always	10.10%	10.10%	10.10%
	Almost always	63.60%	57.30%	60.45%
	Sometimes	23.20%	30.30%	26.75%
	Rarely	2.00%	1.10%	1.55%
	Never	1.00%	1.10%	1.05%
Total		100%	100%	100%

According to the above chart it is reflected that for the first group 63.60% find the information they were looking for, while for the second group a value of 57.30 is obtained, with an average of 60.45% for both groups.

- Opinion on: The documents offered as a result of the DO SEARCH option, according to the criteria "response time, accuracy, relevance or relation to the subject and the data or documents are always updated. They are evaluated with the following rating weights: Very bad (1), Bad (2), Neither good nor bad (3), Good (4), and Very good (5).

Table 5. Criteria for Proof of response times, accuracy, relevance and updating of information.

Ítem	ESPOCH	UNACH	Average
Response times	3.0%	1.1%	2.05%
	2.0%	0.0%	1.00%
	36.0%	30.3%	33.15%
	47.5%	58.4%	52.95%
	11.1%	10.1%	10.60%
	100%	100%	100%
Accuracy	2.0%	0.0%	1.00%
	2.0%	3.4%	2.70%
	40.4%	25.8%	33.10%
	50.5%	57.3%	53.90%
	5.0%	13.5%	9.25%
	100%	100%	100%
Relevance or relationship to the topic	3.0%	0.0%	1.50%
	4.0%	3.4%	3.70%
	33.0%	22.5%	27.75%
	51.5%	62.9%	57.20%
	8.1%	11.2%	9.65%
	100%	100%	100%
The data or documents are always updated	4.0%	0.0%	2.00%
	4.0%	3.4%	3.70%
	33.3%	21.3%	27.30%
	46.5%	61.8%	54.15%
	12.1%	13.5%	12.80%
	100%	100%	100%

Response time: for the first group in the majority the 47.50% when performing the search the response times are good, while for the second group is obtained 58.40%, and a total average of 52.95% for both groups . **Precision:** for the first group, 50.50% is obtained, which, when performing the search, is good, while for the second group a value of 57.30% is obtained, and a total average of 53.90%. **Pertinence or relation to the subject:** 51.50% for the criterion relevance or relation to the subject are good, while for the second group 57.20% is obtained, and a total average 57.20% for both groups. **The data or documents are always up-to-date:** for the first group 46.50% for the upgrade criteria are good, while for the second group 54.15% is obtained, and a total average of 54.15%.

- Opinion on the terms "functionality and interface". Weights: Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), and Strongly agree (5).

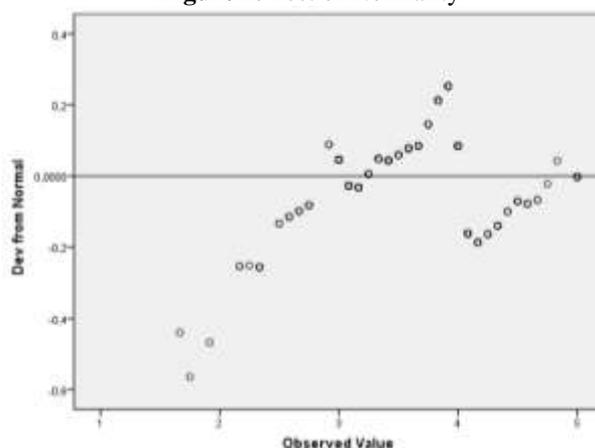
Table 6. Criteria for Functionality and Interface

Item	ESPOCH	UNACH	Average
Friendly Interface	1.0%	4.5%	2.75%
	11.1%	3.4%	7.25%
	32.3%	20.2%	26.25%
	48.5%	60.7%	54.60%
	7.1%	11.2%	9.15%
	100%	100%	100%
Easy to navigate	2.0%	2.2%	2.10%
	10.1%	5.6%	7.85%
	33.3%	18.0%	25.65%
	48.5%	56.2%	52.35%
	6.1%	18.0%	12.05%
	100%	100%	100%
Easy data entry for queries	2.0%	2.2%	2.10%
	12.1%	4.5%	8.30%
	33.1%	20.2%	26.65%
	47.5%	58.4%	52.95%
	5.1%	14.6%	9.85%
	100%	100%	100%
Mayor security in data entry	1.0%	1.1%	1.05%
	8.1%	4.5%	6.30%
	30.3%	12.4%	21.35%
	53.5%	64.0%	58.75%
	7.1%	18.0%	12.55%
	100%	100%	100%
Increased security of data entry	2.0%	3.4%	2.70%
	7.1%	3.4%	5.25%
	42.4%	19.1%	30.75%

	40.4%	51.7%	46.05%
	8.1%	22.5%	15.30%
	100%	100%	100%
The queries are organized and categorized	1.0%	2.2%	1.60%
	8.1%	5.6%	6.85%
	35.4%	22.5%	28.95%
	46.5%	46.1%	46.30%
	9.1%	23.6%	16.35%
	100%	100%	100%
Free document download	3.0%	1.1%	2.05%
	20.2%	10.1%	15.15%
	30.3%	24.7%	27.50%
	38.4%	47.2%	42.80%
	8.1%	16.9%	12.50%
	100%	100%	100%
Availability and printing of reports	5.1%	3.4%	4.25%
	14.1%	6.7%	10.40%
	33.3%	28.1%	30.70%
	38.4%	47.2%	42.80%
	9.1%	14.6%	11.85%
	100%	100%	100%

Friendly interface: for the first group 48.50% agree that the interface is friendly, while for the second group they agree in a 60.7%, with a total average of 54.60%. Easy to navigate: for the ESPOCH most of the 48.50% are in agreement with the criteria of easy navigation, while for the UNACH they agree in a 56.2%, with a total average of 52.35%. Easy data entry for consultations: for the first group 47.50% agree with this criterion, and the second group agree in a 58.4%, with a total average of 52.95%. Greater security in data entry: for the first group most of the 53.50% are in agreement with this criterion, and the second are in agreement 64.0%, with a general average of 58.75%. For the other criteria, the degree of acceptance of agreement is 46.05% for the criterion of efficiencies in the consultations, 46.3% for the criterion of whether the consultations are organized and categorized 42,80% if there is a free Download of documents and 42.8% on the availability and printing of reports. For the verification of the hypothesis we used the data of the different indicators that are the result of applying the survey. In the first instance it was intended to perform the Student T statistic for a sample, so it was necessary to verify normality, but in this case this parameter is not met due to the dispersion of the data as reflected in the following figure.

Figure 2. Test of Normality



IV. DISCUSSION AND CONCLUSIONS

For the structuring of the data collection instrument, quality evaluation models are considered in digital university libraries through their schemes and levels, as well as guides and different criteria, however, these mostly, although they go since the creation until technology implementation, they leave aside the focus on academic training, and it requires the socialization and continuous training of these resources, since in their majority 80% use the traditional libraries compared to the 58.2% that use the virtual ones, knowing in addition that the interest are health topics 95%, and that access more frequently to Elsevier 51.20% and Bibliomedica.47.60%.

However, it is important to emphasize that this paper jealously collects certain indicators of impact or influence of the publication that can be evaluated through Bibliometrics indicators, however, it is left as a concern for future work where it will be possible to follow up on the local production in this type of libraries.

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