

Impact and visibility to the Scientia repository: technical implementations.

Nuria Nevado-Chiné¹, Pilar Roqué-Castellà¹, Rubén Boada-Navarrete², Natalia Torres-Moreno².

1. *Health Sciences Library of Catalonia. Ministry of Health of the Regional Government of Catalonia (Barcelona, Spain)*

2. *CSUC Consorci de Serveis Universitaris de Catalunya. (Barcelona, Spain)*

Corresponding author: Nuria Nevado-Chiné, nnevadoc@gencat.cat

Abstract

Scientia is a DSpace-based institutional repository, created in 2015 by Government agreement as an open access digital platform for to scientific literature produced by professional's Catalonian health system. The paradigm of scientific communication has changed considerably, and for this reason repositories are increasingly looking to achieve excellence not only in content but also in the diffusion. One of the goals of Scientia is to maximize the visibility and impact of the scientific and technical open access literature produced by institutions and centers of the public health system towards society. The object of this work is to analyze the technical implementation of two new tools: the implementation of an API (application programming interface) that allows the automatic inclusion of descriptors in English and Spanish in the registers and a statistical module to facilitate quantify the visibility and impact of research on social networks.

Keywords: Webometrics / Quantitative research / Medical Subject Headings / Controlled vocabularies / Open Access / Institutional Repositories

Introduction:

Scientia is a DSpace-based institutional repository was created in 2015 by Government agreement as an open access digital platform for to scientific literature produced by researchers and personal faculty and professionals of Catalonian health system.

One of the goals of Scientia is to maximize the visibility and impact of the scientific and technical open access literature produced by institutions and centers of the public health system towards society.

The object of this work is to analyze the technical implementation of two new tools:

- 1) the implementation of an API (application programming interface) that allows the automatic inclusion of descriptors in English and Spanish in the registers
- 2) a statistical module to facilitate quantify the visibility and impact of research on social networks.

Methods:

API's implementation for the automatic inclusion of descriptors.

To increase the quality of the description of the documents have been incorporated into the description of the records controlled terms MeSH (Medical Subject Headings) in English, and DeCS (Descriptores en Ciencias de la Salud) in Spanish. To automate its introduction in records, and control and update the descriptors have been integrated two APIs, which allow you to select each vocabulary term more appropriate to the description of the document.

This implementation has two parts:

1. Metadata structure to introduce:

Each document has two repeatable metadata (dc.subject.decs and dc.decs.id) that keep the entire string descriptor and the internal id respectively. Dc.decs.id metadata auto-complete manner transparent to the user holding the id descriptor reef. If the user enters more than one value, the relationship between the two values is metadata for position as they enter orderly. This implementation allows us to automatically update changes descriptors given annually published by DeCS, as they work on the internal id. This ID can update lists of terms MeSH and DeCS root without losing them.

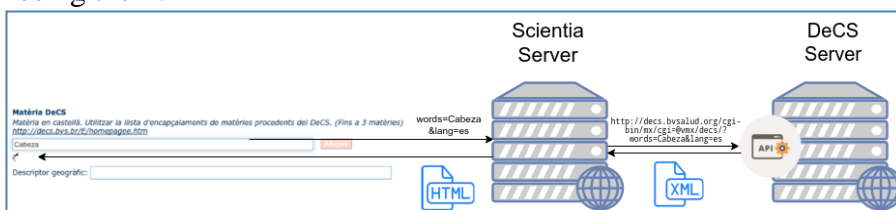


Figure1. Metadata implementation

2. Module support and help about MeSH and DeCS terms

The integration of this module allows you to have all the information concerning that term, without having to visit the websites of MeSH i DeCS. We store all information about this descriptor into “data-info” attribute to show it into another window when the librarian clicks on mouse right button. It helps the librarian to choose the right descriptor.

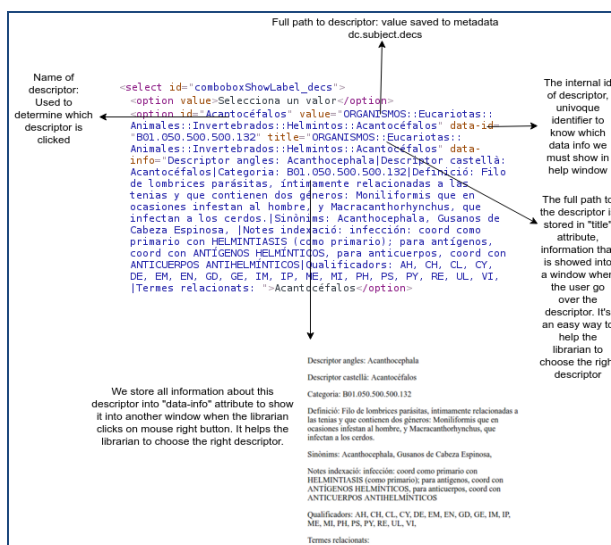


Figure 2. Module support MeSH and DeCS terms

Altmetric's implementation.

To quantify the research's visibility and impact on social networks from the documents deposited Scientia has been implemented Almetrics.com a tool that measures the social impact.

The Implementation on the Scientia DSpace Platform was carried out integrating embeded badges from Altmetrics to our item's page to show the relevency of the document measured in appearances in Social Networks and blogs mainly. We adapted item's page of our Dspace XMLUI theme to include into a lateral menu a box with the donut badge. This donut uses the handle (a unique identifier formed by the repository prefix and auto-increment item identifier) of the item being displayed to obtain and show the Altmetrics score associated with this handle, a weighted score obtained from mentions in some Social Networks, highlighting Twitter.

How Altmetric track mentions? The Altmetric API gives programmatic access the data about articles & datasets collected by Altmetric. This API to fetch basic alt-metrics information about articles & datasets and to use that information. When clicked the badges lead to a page on altmetric.com that contains more information on the article specified. The badge is clickable and it takes you to a page with all the information about this punctuation and all mentions for this item, showing demographics and information about users who did the mentions. Finally, the badge is hidden if the number of mentions is zero, avoiding to show empty donuts.

Results:

Automatic inclusion of descriptors.

With these implementations Scientia aims to improve the quality of the description of the documents. The implementation of an automated MeSH and DeCS terms eliminates ambiguities in the terms, relationships incorrect or typographical errors and the automatic update vocabularies and the document can be searched and recovered in different languages. The API's implementation for the automatic inclusion of descriptors allows remote retrieval via http, through three search types: the hierarchical search, word search and word search with Boolean operators. Every time that interrogate the system, our answer will be the most actual version about this terms.

Altmetric tool.

Incorporating altmetrics facilitates the analysis and quantify the impact of "social media" on the scientific activity deposited in Scientia, always updated data and providing a more global concept of the impact of publications. Freemium service offers free bookmarklet, limited use API; paid fullservice API and reports. Altmetric tracks thousands of mentions of scholarly work each day. The Altmetric score is an automatically calculated, weighted algorithm. It is based on 3 main factors¹:

1. The volume of the mentions
2. The source of the mentions
3. The author of the mentions

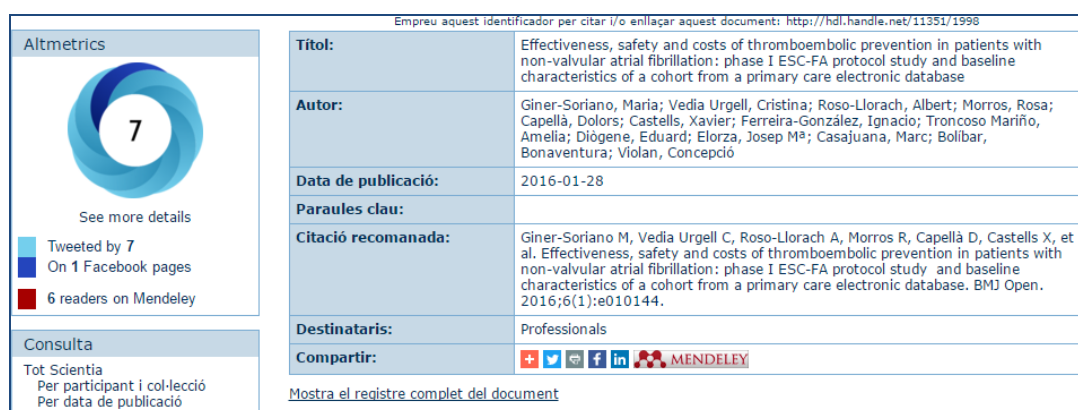


Figure 3. Altmetric implementation

Mentions in blogs, the number of tweets or people who keep your article manager references are also values that allow us to observe the use and impact of scientific publications. Implementing altmetrics is a value-added service for Scientia's depositors. Do mentions have innovative value in communicating impact. Metrics also is taken into account when assessing the impact of a publication or study.

Conclusions:

Open access and the digital revolution has transformed the way of accessing and disseminating the scientific research. Controlled vocabularies in English, Spanish and Catalan facilitate the dissemination worldwide of documents deposited in the repository and the registers can be recovered in more than one language. And the use and exchange of scientific production in the social web is a step to consider in an increasingly technological society researcher.

The paradigm of scientific communication has changed considerably, and for this reason repositories are increasingly looking to achieve excellence not only in content but also in the diffusion.

References

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