

Latindex: A tool to extend the dissemination of scientific publications and to improve their quality assessment

Carmen Chica

INTERNATIONAL MICROBIOLOGY, Barcelona, Catalonia

Correspondence:

International Microbiology
Poblet 15, 3r 3a
08028 Barcelona, Catalonia
Tel. +34 933 341 079
Fax: +34 933 341 079
E-mail: cchica@microbios.org

Summary. The need for a tool to determine the status of scientific publications in Latin America and the Caribbean, their subsequent classification, and their evaluation gave rise to Latindex. Despite the complex and difficult work needed to launch this project, its designers at the Universidad Nacional Autónoma de México (UNAM) were convinced of the usefulness of their idea and they benefited from the cooperation of researchers in charge of potential member publications. Today, Latindex is a widely spread tool, a portal of portals, with nearly 25,000 journals from Latin America, the Caribbean, Spain, and Portugal. It is both a directory and a catalogue, offers links to electronic journals, serves as a warehouse of information on products and services useful for editorial work, and includes a publication guide. Moreover, the Latindex criteria are a frame of reference for the self-evaluation and updating of journals by their officers, as well as for the incorporation of these publications into the Latindex system.

Keywords: Latindex system · Latindex criteria · evaluation of scientific journals · scientific dissemination · science assessment

Resum. La necessitat d'un instrument per conèixer la situació de les publicacions científiques a l'Amèrica Llatina i el Carib, per a la seva posterior classificació i avaluació, va impulsar la creació de Latindex. Malgrat la tasca complexa i difícil per engegar el projecte, els seus impulsors, de la Universidad Nacional Autónoma de México estaven convençuts de la utilitat de la seva idea i van comptar amb la col·laboració d'investigadors responsables de publicacions que podrien participar en el projecte. Avui, Latindex és una eina de gran difusió, un portal de portals, amb prop de 25.000 revistes de l'Amèrica Llatina, el Carib, Espanya i Portugal. És alhora un directori i un catàleg, ofereix enllaços a revistes electròniques, i serveix com un magatzem d'informació sobre productes i serveis d'utilitat editorial i inclou una guia per a publicacions. A més, els criteris Latindex són un marc de referència per a l'autoavaluació i l'actualització de les revistes per part dels seus responsables, així com per a la incorporació d'aquestes revistes al sistema Latindex.

Paraules clau: sistema Latindex · criteris Latindex · avaluació de revistes científiques · difusió científica · avaluació de la ciència

The beginnings

The Latindex project started in the late 1990s as a regional initiative, initially for Latin America and the Caribbean, but with the almost immediate inclusion of Spain and Portugal [3,4,5]. From the beginning, its promoters sought to create

an instrument for making the scientific work developed in those countries known to researchers throughout the world. Coordinated and well conducted efforts over time led to the Latindex we know today [1]. The initiative gradually took shape in two meetings held in Guadalajara, Mexico, within the framework of the prestigious Book Fair of that city. The



Fig. 1. Cover of the books published on the occasion of the two meetings on scientific publications in Latin America, in Guadalajara, Mexico, in 1994 (left), and 1997 (right).

first of those meetings, held in 1994, was a workshop on scientific publications in Latin America, during which the foundations of the project were discussed. In 1997, at the second workshop, the document “Latindex, a dos años de su concepción” (Latindex, two years after its conception), was presented (Fig. 1). The author of this article participated in this second meeting, which would lead to the publication of a book [5,10] with contributions by the participants (Fig. 2).

In a first phase, information on the existing journals in the various areas of knowledge was collected, followed by the setting of standards, criteria, and quality indicators for evaluation. It was an arduous task given the number of publications of many types, including magazines, journals,

newsletters, reports, and other forms of documentation. Each professional group, whether in the experimental or the social sciences, had a written medium in which its members could communicate the results of their research, news of interest, theses, grant announcements, etc. Thus, while these groups were invested in the ultimate success of the project, much analysis and classification were needed to determine where and how to start. Initially, a directory was created that listed the quality criteria for the inclusion of publications in the catalog and their subsequent indexing. In addition, some of these products were deemed eligible to participate in the call for grant proposals, with the awardees subject to periodic assessment.



Fig. 2. Photo of the group attending the Second Workshop on Latin American Scientific Journals, Guadalajara, Mexico, 27–29 November, 1997. The author is on the middle row, fifth from left to right.

Ana María Cetto, of the UNAM, was the main responsible for the project's success, jointly with her team. Their efforts resulted in the participation of a large number of journal editors, representing virtually all countries included in Latindex.

The Latindex system

Projection and dissemination. Latindex has evolved to become an information and consultation system for journals published in the member regions. In addition, it has contributed to their dissemination and maintenance but also to improving their scientific quality. Thus, the system has many of the same functions as scientific publishers or similar, well-established and powerful entities in managing its products [6,9] (Table 1).

Table 1. Latindex in numbers*

Product	Number of journals included
Directory	22,795
Catalog	7,616
Link to electronic journals	5,913

*The data are updated continuously, with the addition of new titles.

From the beginning, cooperation between Latindex and research institutions has been essential to gather and disseminate information on the serial scientific publications produced in the region. In turn, the project has encouraged the participation of a great number of people, both research and non-research personnel, who have signed on with enthusiasm. The realization of Latindex has meant the recognition of work performed with conviction but often with little visibility beyond the people concerned. At the same time, it has provided encouragement for further efforts, by offering the benefits derived from professionalism and the experience of working together.

Latindex, today. Latindex functions as an online information system for the scientific, technical, and cultural dissemination of journals from Latin America, the Caribbean, Spain, and Portugal. These publications are searched through a directory, catalog, or link to electronic journals.

The portal [<http://www.latindex.org>] provides information on the number of journals by subject, region, country, editorial team, and indexing. Also available are several products and services that are very useful for matters of importance to publications. The management structure of Latindex consists of a president, a general secretary, and a coordinator, as well as a representative-coordinator from each participating country. Two of the project's founders, Ana María Cetto and Octavio Alonso, currently serve, respectively, as the President and General Coordinator.

Ana María Cetto (Mexico, DF, Mexico; 1946) earned her Ph.D. in Physics at the National Autonomous University of Mexico (UNAM). Her extensive research in theoretical physics has led to significant contributions to the field of quantum mechanics, stochastic electrodynamics, and the interaction of light with matter. In addition, she has a long career in international organizations, among others as the President of the Pugwash Conferences (Nobel Peace Prize 1995), as a member of the Council of the University of the United Nations, and as Deputy Director General of the International Atomic Energy Agency (IAEA), located at Vienna, Austria (entity that won the Nobel Peace Prize in 2005), where she also served as Director of the Department of Technical Cooperation. In 2002, she became the first Latin American woman elected General Secretary of the International Council for Science (ICSU), a position she held until 2008. She has been Vice-President of the Commission of Physics for the Development of the International Union of Pure and Applied Physics (IUPAP), a member of the International Network for the Availability of Scientific Publications and of its Committee on Science & Technology in Developing Countries. She was Vice-President of the Third World Organization for Women in Science, and President of the Board of the International Foundation for Science. She worked as a consultant in the organization of the World Conference on Science, Budapest, 2000. She was the main driver of the Latindex project and is currently its president.



Ana María Cetto delivering a speech at the Institute for Catalan Studies (IEC) in 2007. (Photo by J. Pareto, Archives IEC.)

Latindex has three databases: (i) Directory, containing bibliographic data and contact information on all registered journals, both in print form and electronic; (ii) Catalog, which is limited to those journals, printed or electronic, that meet the quality criteria established by Latindex; and (iii) Electronic Journals, a link that allows access to the full texts of electronic journals on their respective web sites. In the "Products" section, there is a detailed description of these resources and how to use them.

Present organizational structure and future

Latindex operates on the basis of regional cooperation through an institution responsible for each participating country. The overall coordination of the system is managed by the Department of Latin American Literature, General Directorate of Libraries of the UNAM. Computer support, website development, and the entrance of data into the online system are handled by the UNAM's Directorate General of Computer and Information Technology and Communication. New journals are included in Latindex by registration (free) through the coordinators of each country. The requirements include that the journal is periodically published and present contents of scientific and academic interest in Latin America, the Caribbean, Spain, and Portugal.

Journals aimed at the dissemination of scientific research or scientific or cultural information are eligible, but not publications that represent the interests of specific companies or commercial entities, nor purely promotional products or services. Thus, the Latindex criteria provide a valuable guide to the field of scientific publishing and greatly facilitate the assessment of new products or the updating of existing ones [see Appendix]. The exhaustive criteria, some of which are of mandatory fulfillment and others desirable to achieve, have been designed to allow their gradual adaptation. This is advantageous in cases in which, for various reasons, the publication in question cannot implement these criteria immediately. This approach also supports quality-oriented goals for the product and encourages those underlying its publication. An important aspect of Latindex is the "Library for the publisher" section, which includes guides to scientific publications and to good practice for open access journals [7,8,11].

For those of us present at the birth of this project, we celebrate the fact that not only has it survived, it has also thrived, reaching the highest levels of dissemination and knowledge throughout the scientific world. Moreover, it has earned a respected place among other systems devoted to similar activities in other countries, including those with much greater resources for their expansion [2]. Latindex is a system of great utility that universally provides information about the scientific R&D carried out in Latin America, the Caribbean, Spain and Portugal [12] and the quality of the associated publications. Science and scientific publishing in addition to their contribution to progress, and especially with the advent of digital technology, allow direct communication between people, regardless of their physical distance.

Scientific publication is the reflection of the research that is carried out in a country. It would not make sense speaking only in theory of the benefits of scientific research and what it means for the development of a country. From the point

of view of basic science, research means the contribution of the peculiarities of any given field to the general knowledge, while applied science improves the current conditions in many fields, including medicine and health, agriculture, environmental and food science, and bioremediation.

Latindex contributes to this general, basic and applied knowledge by spreading the information on research performed on the geographic regions it deals with. It also provides information on the result of scientific exchanges with other countries. Much of this knowledge is generated by researchers from countries participating in joint projects or spending stays to do research in other countries. These are Latin Americans in Europe, Asia and North America-Canada, or citizens from those regions who work in research centers of Latin America, Caribbean, Spain and Portugal. The future of Latindex is closely linked to the future of the development and exchange of scientific knowledge. ■

References

1. Aguirre M, Cetto AM, Córdoba S, Flores AM, Román A (2006) Calidad editorial y visibilidad de las revistas. La experiencia de Latindex. In: Babini D, Fraga J (eds) Edición electrónica, bibliotecas virtuales y portales para las ciencias sociales en América Latina y el Caribe. CLACSO, Buenos Aires, pp. 103-122
2. Cronin B, Atkins HE (2000) The web of knowledge. Information today Inc. NJ, EE.UU., 565 pp
3. Cetto AM (1998) Ciencia y producción científica en América Latina. El proyecto Latindex. *Int Microbiol* 1:181-182
4. Cetto AM, Hillerud KI (eds) (1995) Publicaciones científicas en América Latina. Fondo de Cultura Económica, México, 305 pp
5. Cetto A, Alonso O (eds) (1999) Revistas científicas en América Latina, Fondo de Cultura Económica, México, 490 pp
6. Cetto AM, Alonso-Gamboa JO, Córdoba S (2010) Ibero-American systems for the dissemination of scholarly journals: a contribution to public knowledge worldwide. Journal URL: www.src-online.ca
7. Chica C. (2008) Microbiology in Latin America and the ALAM. *Int Microbiol* 11:221-225
8. Chica C, Skinner N (2010) Looking for a place in the sun: science and technology in Latin America. *Int Microbiol* 13:159-164
9. Finch J, et al. (2013) Accessibility, sustainability, excellence: how to expand access to research publications. Executive Summary (Report of the Working Group on Expanding Access to Published Research Findings). *Int Microbiol* 16:125-132
10. Guerrero R, Chica C (1999) Revistas científicas latinoamericanas. A la búsqueda de un lugar en el sol. In Cetto A, Alonso O. (eds.) *Revistas científicas en América Latina*, Fondo de Cultura Económica, México, pp 272-283
11. Guerrero R, Piqueras M (2004) Open access. A turning point in scientific publication. *Int Microbiol* 7:157-161
12. Sebastián J (2007) *Claves del desarrollo científico y tecnológico de América Latina*. Siglo XXI, Madrid, 484 pp

APPENDIX. Latindex evaluation criteria

Criteria fixed by Latindex for the evaluation of scientific journals published in Latin America, the Caribbean, Spain and Portugal. There are 33 criteria for printed journals and 36 for electronic journals. For a journal to be incorporated into the Latindex catalogue, it must fulfill all basic criteria and at least 75% of all criteria. Evaluation criteria are presented here in the original Spanish version and its translation into English. The translation into Catalan is included in the article by L. Rovira and L. Serrate-Casado, pp 141-150, this issue.

Spanish (original version)

Criterios para revistas impresas

Características básicas (se tienen que cumplir todas)

1. Mención del cuerpo editorial
2. Contenido. Al menos el 40% de los trabajos serán: *a)* artículos originales inéditos, *b)* informes técnicos, *c)* ponencias o comunicaciones a congresos, *d)* cartas al editor o artículos breves, *e)* artículos de revisión, *f)* reseñas de libros.
3. Antigüedad mínima 1 año.
4. Identificación de los autores con el nombre completo.
5. Lugar de edición.
6. Entidad editora.
7. Mención del director.
8. Mención de la dirección de la revista.

Criterios para revistas electrónicas

- Mención del cuerpo editorial.
- Contenido. Al menos el 40% de los trabajos serán: *a)* artículos originales inéditos, *b)* informes técnicos, *c)* ponencias o comunicaciones a congresos, *d)* cartas al editor o artículos breves, *e)* artículos de revisión, *f)* reseñas de libros.
- Generación continua de contenidos.
- Identificación de los autores con el nombre completo.
- Entidad editora.
- Mención del director.
- Mención del URL de la revista.
- Mención de la dirección de la revista

Características de presentación de la revista

- | | |
|---|--|
| <ol style="list-style-type: none"> 9. Páginas de presentación. Deben incluir título completo, ISSN, volumen, número, fecha y membrete bibliográfico. 10. Mención de periodicidad. 11. Tabla de contenidos (índice). 12. Membrete bibliográfico al inicio del artículo. Debe contener al menos título y numeración de la revista. 13. Membrete bibliográfico en cada página. 14. Miembros del consejo editorial. 15. Afiliación institucional de los miembros del consejo editorial. 16. Afiliación de los autores. 17. Indicación de las fechas de recepción y aceptación de originales. | <p>Navegación y funcionalidad. Se recomienda un máximo de tres clicks para acceder a cualquier contenido.</p> <p>Mención de periodicidad.</p> <p>Acceso a los contenidos. Facilidad de acceso al contenido.</p> <p>Acceso histórico al contenido. Por el tiempo de vida de la revista, o por un tiempo mínimo de tres años.</p> <p>Membrete bibliográfico en cada página.</p> <p>Miembros del consejo editorial.</p> <p>Afiliación institucional de los miembros del consejo editorial.</p> <p>Afiliación de los autores.</p> <p>Indicación de las fechas de recepción y aceptación de originales.</p> |
|---|--|

Características de gestión y política editorial

- | | |
|--|---|
| <ol style="list-style-type: none"> 18. ISSN. 19. Definición de la revista. Objetivo, cobertura temática y/o público al que va dirigida. 20. Sistema de evaluación. Indicación del procedimiento para la selección de los artículos. 21. Evaluadores externos. 22. Autores externos. Al menos el 50% de los trabajos publicados serán de autores externos a la entidad editora. 23. Apertura editorial. Al menos dos tercios del consejo editorial serán ajenos a la entidad editora. 24. Servicios de información. Estar incluida en índices, directorios o bases de datos. 25. Cumplimiento de la periodicidad. | <p>ISSN.</p> <p>Definición de la revista. Objetivo, cobertura temática y/o público al que va dirigida.</p> <p>Sistema de evaluación. Indicación del procedimiento para la selección de los artículos.</p> <p>Evaluadores externos.</p> <p>Autores externos. Al menos el 50% de los trabajos publicados serán de autores externos a la entidad editora.</p> <p>Apertura editorial. Al menos dos tercios del consejo editorial serán ajenos a la entidad editora.</p> <p>Servicios de información. Estar incluida en índices, directorios o bases de datos.</p> <p>Cumplimiento de la periodicidad.</p> |
|--|---|

Características de los contenidos

26.	Contenido original. Al menos el 40% de los artículos deben ser trabajos de investigación originales.	Contenido original. Al menos el 40% de los artículos deben ser trabajos de investigación originales.
27.	Instrucciones a los autores.	Instrucciones a los autores.
28.	Indicación de las normas para las referencias bibliográficas.	Indicación de las normas para las referencias bibliográficas.
29.	Exigencia de originalidad. Debería indicarse en las instrucciones a los autores.	Exigencia de originalidad. Debería indicarse en las instrucciones a los autores.
30.	Resumen.	Resumen.
31.	Resumen en dos idiomas.	Resumen en dos idiomas.
32.	Palabras clave.	Palabras clave.
33.	Palabras clave en dos idiomas.	
34.	-	Metaetiquetas. Conjunto de datos para la identificación y/o descripción de una fuente de información para su recuperación (muchos buscadores usan información almacenada en metaetiquetas para indexar páginas web).
35.	-	Buscadores. Inclusión de algún motor de búsqueda por palabras, índices, etc.
36.	-	Servicios de valor añadido. Alertas, enlaces hipertextuales, foros, guías de enlaces, etc.

English

Criteria for printed journals

Basic features (all of them must be fulfilled)

1. Indication of the editorial body.
2. Contents. At least 40% should include: (a) original unpublished articles; (b) technical reports, standards or specifications; (c) papers or contributions to conferences; (d) letters to the editor or similar articles; (f) review, state-of-the-art articles; (g) book reviews.
3. Minimum age 1 year.
4. Authors identification with full name.
5. Place (city/town where the journal is published).
6. Publisher.
7. Indication of the editor-in-chief.
8. Indication of the journal address.

Criteria for electronic journals

- Indication of the editorial body.
- Contents. At least 40% should include: (a) original unpublished articles; (b) technical reports, standards or specifications; (c) papers or contributions to conferences; (d) letters to the editor or similar articles; (f) review, state-of-the-art articles; (g) book reviews.
- Continuous content. Constant flow of articles throughout several months or one year.
- Authors identification with full name.
- Publisher.
- Indication of the editor-in-chief.
- Indication of the journal's website URL.
- Indication of the journal's postal address.

Presentation characteristics of the journal

9. Presentation pages. They must include at least the full title of the journal, ISSN, volume, number, date, and bibliographic heading.
10. Indication of frequency.
11. Table of contents or index.
12. Bibliographic heading at the beginning of the article. It must contain at least: complete or abbreviated title, and volume, number or equivalent.
13. Bibliographic heading on each page.
14. Editorial board members.

Journal's display features

- Navigation and functionality. A maximum of three clicks by the user to access any content is recommended.
- Indication of frequency.
- Access to the contents. Ease of access to the content: summaries, articles, previous issues and others.
- Access to historical content. Availability to journal back issues for at least three years (if the journal is more than three years old).
- Bibliographic heading on each page.
- Editorial board members.

15.	Institutional affiliation of the editorial board members.	Institutional affiliation of the editorial board members.
16.	Authors' affiliation.	Authors' affiliation.
17.	Dates of entry and acceptance of originals.	Dates of entry and acceptance of originals.

Management and editorial policy features

18	ISSN.	ISSN.
19	Definition of the journal. Declaration of the objective, subjects covered, and/or the audiences the journal is aimed at.	Definition of the journal. Declaration of the objective, subjects covered, and/or the audiences the journal is aimed at.
20	Review system. Indication of the system to select articles for publication.	Review system. Indication of the system to select articles for publication.
21	External evaluators.	External evaluators.
22	External authors. At least 50 % of the works published must come from authors external to the editorial body.	External authors. At least 50% of the works published must come from authors external to the editorial body.
23	Editorial openness. At least two thirds of editorial board members must not belong to the journal's publishing institution.	Editorial openness. At least two thirds of editorial board members must not belong to the journal's publishing institution.
24	Information systems. Sources of information or resources where the journal is indexed.	Information systems. Sources of information or resources where the journal is indexed.
25	Frequency compliance.	Frequency compliance.

Contents features

26	Original content. At least 40 % of the contents must be original articles or contributions, research results, scientific communications or original creations.	Original content. At least 40 % of the contents must be original articles or contributions, research results, scientific communications or original creations.
27	Instructions to authors. Information on the standards and rules used by the journal.	Instructions to authors. Information on the standards and rules used by the journal.
28	Bibliographic feature style.	Bibliographic feature style.
29	Originality requirement.	Originality requirement.
30	Abstract.	Abstract.
31	Abstract in two languages.	Abstract in two languages.
32	Keywords.	Keywords.
33	Keywords in two languages.	Keywords in two languages.
34	-	Meta tags. Set of data for the identification and/or description of an information resource for its recovery (many search engines use information stored in meta tags to index web pages).
35	-	Search engines (having a search engine that allow readers to search journal's web site is a plus).
36	-	Value-added services. Additional services offered by the journal's website.

Latindex is licensed under a Creative Commons Attribution-NonCommercial.

