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Edited by Paola De Castro
for the NECOBELAC working group

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2012, vii, 210 p. Rapporti ISTISAN 12/26

This document reflects the activity of the NECOBELAC project with special reference to the training strategy intended to improve scientific writing and create awareness on Open Access (OA) publishing models. The acronym NECOBELAC stands for Network of COllaboration between Europe and Latin American Caribbean countries. The project was funded by the European Commission within the 7th Framework Programme for Research and Development in the area "Science in Society" for the years 2009-2012, and was coordinated by the Istituto Superiore di Sanità, the National Institute of Health in Italy. NECOBELAC represents a consolidation initiative in support of OA dissemination practices of scientific output in public health. The report is divided into two parts, the first one describes the project strategy and results achieved, the second one regards the NECOBELAC topic maps that were utilized as training tools in scientific writing and OA publishing.

Key words: Open Access; Scientific publishing; Scientific writing; International cooperation; Topic maps; Training

Istituto Superiore di Sanità
Attività di formazione in scrittura scientifica e modelli di pubblicazione ad accesso aperto: l'esperienza del progetto NECOBELAC in Europa e America Latina.
A cura di Paola De Castro per il Gruppo di lavoro NECOBELAC
2012, vii, 210 p. Rapporti ISTISAN 12/26 (in inglese)

Il documento contiene una sintesi delle attività svolte nell'ambito del progetto NECOBELAC con particolare riferimento alla strategia di formazione volta a migliorare la scrittura scientifica e a creare consapevolezza sui vantaggi offerti dalla pubblicazione ad accesso aperto. L'acronimo NECOBELAC sta per Network of COllaboration between Europe and Latin American Caribbean countries. Il progetto, coordinato dall'Istituto Superiore di Sanità, è stato finanziato dalla Commissione europea nell'ambito del Settimo Programma Quadro per la ricerca e lo sviluppo, nel settore "Scienza e Società", per gli anni 2009-2012. NECOBELAC rappresenta un'azione di consolidamento a supporto dei modelli di disseminazione ad accesso aperto dei risultati della ricerca scientifica nel settore della salute pubblica. Il rapporto è diviso in due parti: la prima riguarda la strategia del progetto e i risultati raggiunti, la seconda le mappe concettuali di NECOBELAC utilizzate come supporto per la formazione nei corsi di scrittura scientifica e modelli di pubblicazione ad accesso aperto.

Parole chiave: Accesso aperto; Pubblicazione scientifica; Scrittura scientifica; Cooperazione internazionale; Mappe concettuali; Formazione

The texts contained in Part 1 of this report were written by the NECOBELAC working group according to the activity carried out within the project itself. The texts of Part 2 were written by the NECOBELAC working group and their collaborators according to their competences and skills in scientific writing and open access publishing. The NECOBELAC topic maps (texts and schemes) included in Part 2 of this report are available in the project website (www.necobelac.eu) in the four project languages (English, Spanish, Portuguese, and Italian).

The NECOBELAC project (n. 230583) was funded by the European Commission within the 7th Framework Programme for Research and Development in the area "Science in Society".

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Institutions supporting the organization of training courses for trainers (T1)
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Argentina	Comisión Nacional Salud Investiga – Ministerio de Salud de la Nación, Universidad Maimónides, Centro Argentino de Información Científica y Técnica-CONICET, Biblioteca Electronica del Ministerio de Ciencia, Tecnología e Innovación Productiva, KMC-OPS/OMS Argentina (Caty Iannello)
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Colombia	Universidad Nacional de Colombia (project partner and collaborators)
Ecuador	Universidad Tecnológica Equinoccial de Quito (Raúl Harari)
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Italy	Istituto Superiore di Sanità (project partner and collaborators) Consiglio Nazionale delle Ricerche, Roma (Rosa Di Cesare, Daniela Luzi) Istituto Italo-Latino Americano (Rossana Righetti, Luis Noriega, Mónica Dimaté)
Mexico	Universidad de Guadalajara (Itzcóatl Tonatiuh, Héctor Raúl Solís Gadea, Tere Rodrigues Jiménez)
Portugal	Univeridade do Minho (project partner and collaborators)
Spain	Consejo Superior de Investigaciones Científicas (project partner and collaborators) Instituto de Salud Carlos III (Elena Primo, Cristina Bojo Canales)
UK	The University of Nottingham (project partner and collaborators).

Institutions supporting the organization of local training replication activity (T2)
The list is reported in Appendix C.

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Part 2

NECOBELAC topic maps

LIST OF THE MAIN ABBREVIATIONS AND ACRONYMS

BIREME/PAHO/WHO	BIblioteca REgional de MEdicina (today, Latin–American Center for Information in Health Sciences), Pan American Health Organization/World Health Organization
BOAI	Budapest Open Access Initiative
COAR	Confederation of Open Access Repositories
COPE	Committee on Publication Ethics
CSIC	Consejo Superior de Investigaciones Científicas
DOAR	Directory of Open Access Repositories
EASE	European Association of Science Editors
EQUATOR	Enhancing the QUAlity and Transparency Of health Research
FECYT	Fundación Española para la Ciencia Y Tecnología
ICMJE	International Committee of Medical Journal Editors
ICT	Information and Communication Technologies
IPR	Intellectual Property Rights
IR	Institutional Repository
ISP	Instituto de Salud Pública
ISS	Istituto Superiore di Sanità
LILACS	Latin American and the Caribbean literature on health sciences
NECOBELAC	Network of COllaboration Between Europe and Latin American Caribbean countries
OA	Open Access
OACA	Open Access Citation Advantage
OAD	Open Access Directory
OAI	Open Archives Initiative
OAI-ORE	Open Archives Initiative – Object Reuse and Exchange
OAI-PMH	Open Archives Initiative – Protocol for Metadata Harvesting
OASIS	Open Access Scholarly Information Sourcebook
OJS	Open Journal System
RedALyC	Red de Revistas Cientificas de America Latina y el Caribe, España y Portugal
ROAR	Registry of Open Access Repositories
ROARMAP	Registry of Open Access Repository Material Archiving Policies
SciELO	Scientific Electronic Library Online
STM	Scientific, Technical and Medical
SWORD	Simple Web Service Offering Repository Deposit
UMINHO	Universidade do Minho
UNOTT	The University of Nottingham
URM	Uniform Requirements for Manuscripts submitted to biomedical journals
VHS	Virtual Health Library
WAME	World Association of Medical Editors

INTRODUCTION

This document reflects the activity of the NECOBELAC project with special reference to the training strategy intended to improve scientific writing and create awareness of open access publishing models. The acronym NECOBELAC stands for Network of COllaboration between Europe and Latin American Caribbean countries, in fact, the project has been working in a wide geographical area.

The NECOBELAC project was funded by the European Commission within the 7th Framework Programme for Research and Development in the area "Science in Society", for the years 2009-2012, and was coordinated by the Istituto Superiore di Sanità, the National Institute of Health in Italy.

NECOBELAC represents a consolidation initiative in support of OA dissemination practices of scientific output in public health. It is based on a strong networking activity among academic and research institutions working in the fields of public health and related disciplines, and in information communication technologies. NECOBELAC had the ambitious objective to promote a cultural change in health production and dissemination process and adopted a bidirectional approach, from Europe to Latin America and vice versa, in promoting exchange of information and best practices, and fostering new research collaborations among the institutions involved in the NECOBELAC network. Take for example SciELO, the Scientific Electronic Library Online, operating in Latin America since 1997, scarcely known in many European countries, apart from Spain and Portugal. SciELO now includes about 1000 journals selected according to quality criteria, and in July 2012 entered the Web of Knowledge by Thomson. On the other hand, many European initiatives were scarcely known in Latin America and NECOBELAC contributed to raise awareness on relevant issues regarding both scientific writing and OA initiatives. Furthermore, the project activity, supported by prestigious academic and research institutions, will continue to produce its effects also after the project termination.

The aim of this document is to provide a reference tool that can be utilized by institutions working in the field of public health and facing different levels of information literacy and technologies. It will help to organize a training programme to contribute improving scientific writing skills and create awareness on OA benefits and possible strategies to change consolidated publication practices.

This report is divided into two parts:

- *Part 1 – NECOBELAC project*
  It provides a general overview of the NECOBELAC project, including its vision and strategy. Results achieved are reported in terms of training initiatives, production of training tools, networking and cooperation activity as well as dissemination and communication activities. This part also includes some considerations on the evaluation of results achieved.
- *Part 2 – NECOBELAC topic maps*
  It contains a detailed description of the NECOBELAC topic maps developed by the project team as a support for training. They refer to both scientific writing and OA publishing and include interconnected training modules which can be used also as single units of learning to organize training activities at different levels. Such topic maps were conceived as an online tool, based on semantic web technologies. All texts were peer reviewed by external reviewers in the specific fields. This part of the report also reproduces the main training modules represented in the NECOBELAC topic maps,

including a short textual description, a scheme, and points for discussion. All topic maps were produced in the four project languages (English, Spanish, Portuguese and Italian) and are available in the project website (www.necobelac.eu) that shall be in operation for three years after the project termination (July 2012).
The reproduction of topic maps in a book format required major editorial work; in fact, the online version contains overlapping information in the different modules to facilitate the use of topic maps as separate units; in the book format, we tried to avoid redundancies and repetitions of the same concepts to allow a sequential reading.
All the links in the online version of the topic maps do not appear in this book which includes only a selected reference list of web sources.

Information and references were updated at the moment of the production of topic maps (December 2011), so many initiatives reported in the book have been developing since then; we apologise for missing links, if any, in the current online version of the topic maps.

Last but not least, it is worth mentioning that the NECOBELAC project activity herein described as well as the training tools are the result of a group work including all project partners and their collaborators who contributed to the realization of the project objectives according to their experience and expertise within a shared strategy.

Finally, I wish to thank all the participants in the NECOBELAC training activity, and the institutions supporting them, both in Europe and Latin America, who permitted us to carry on training at different levels, learn from local experiences, adjust the project strategy and grow in a really international perspective towards a multidisciplinary approach to open science by networking and training for global health.

Paola De Castro

NECOBELAC project coordinator

Part 1
NECOBELAC project

PROJECT FEATURES

General overview

Information diffusion and the proper use of existing sources play a strategic role in every field of activity and even more in public health where knowledge is directly associated with human well-being.

In the last decades, the Open Access (OA) movement supporting free access to scientific information and data has acquired a worldwide dimension thus creating major awareness on the importance of promoting Internet distribution of scientific knowledge without barriers. The number of online sources is continuously increasing as well as the initiatives in support of a transition towards a digital environment guaranteeing immediate and free access to information for all.

The Berlin Declaration, one of the most famous statements in support of OA, clearly summaries the goal of the movement and stresses the necessity of the active commitment of "each and every individual producer of scientific knowledge and holder of cultural heritage", stating:

> Our mission of disseminating knowledge is only half complete if the information is not made widely and readily available to society. New possibilities of knowledge dissemination not only through the classical form but also and increasingly through the open access paradigm via the Internet have to be supported

Many initiatives have been developed in the last decades at national and international level to promote OA and also the European Commission (EC), aware of the implications of OA at different levels, has being financing different projects in support of OA practices; among them there is the project NECOBELAC financed by the EC within the 7th Framework Programme in Science in Society for the years 2009-2012.

The main objective of the NECOBELAC project was to create a network of institutions to enhance the production and dissemination of quality scientific information in the field of public health through a specific training strategy addressed to different stakeholders (www.necobelac.eu). NECOBELAC, therefore, represents an original consolidation initiative supporting the acquisition of scientific writing skills and OA dissemination practices, to guarantee wide and equitable diffusion of research output, in particular publicly funded research, and, at the same time, to favour the development of new scientific collaborations in public health.

The project partners are represented by institutions seated both in Europe and Latin America conveying different skills and experiences in information dissemination practices:

- Istituto Superiore di Sanità (ISS) (project coordinator) (Italy);
- Consejo Superior de Investigaciones Científicas (CSIC) (Spain);
- University of Nottingham (UNOTT) (United Kingdom);
- BIREME/PAHO/WHO (Brazil);
- Instituto de Salud Pública de la Universidad Nacional de Colombia (ISP) (Colombia);
- Universidade do Minho (UMINHO) (Portugal).

The progress and outcomes of the project activities are also reported in the project deliverables which are available in the project website.

Project strategy

One of the original aspects of the NECOBELAC project in support of OA to scholarly output was to create major community involvement to guarantee an equitable distribution of knowledge.

In this respect the project addressed different stakeholders, mainly researchers as authors of scientific publications and editors, librarians, information specialists, administrators and decision makers, and involved them to take an active role within the project strategy.

The project implies a cultural change in traditional publication models and therefore its impact is not expected in the short run.

NECOBELAC strategy was mainly based on three action lines:

1. *Two-level training strategy*
   It is the organization of training initiatives to improve scientific writing skills and implement scientific communication systems based on the concept of immediate, open and permanent access to research results.
   This line included the development and implementation of a flexible and sustainable training programme in scientific writing and OA publishing for the diffusion of health information.
   Two levels of training activities were envisaged to guarantee the programme sustainability and impact (Figure 1):
   - Training for trainers (T1 activities), where NECOBELAC project partners performed the role of teachers together with selected local experts.
   - Local training (T2 activities), directly performed by participants in the above T1 activities with the support of NECOBELAC project partners and local experts. The local training was based on NECOBELAC training materials and tools (topic maps), which were properly selected according to the needs of academic and research institutions in Latin American and European countries.

2. *Training tools*
   They are represented by online topic maps, and other online and printed material to be used in *ad hoc* training programmes and to support local training initiatives.
   Topic maps on scientific writing and OA were identified as an appropriate training tool for such a large scale project requiring great flexibility. They are based on the semantic web technology (http://code.google.com/p/ontopia/); ontopia has a navigator framework – a JSP tag library and Java API – which enables the development of web-based interfaces associated with topic maps. This technology permits the relationships among different factors, actors and initiatives and represents information using “topics”, “associations” and “occurrences”.
   The NECOBELAC topic maps consist of different modules on scientific publication and OA, each one having a scheme, a brief textual description, links to selected online resources and suggested points for discussion. This online tool was selected for its modular structure and therefore adaptability to different local training requirements.
   Other online and printed material explaining the NECOBELAC training strategy and the use of the project online resources (topic maps) was provided to the participants in T1 activities who committed themselves to replicate the training at local level.
   All material was produced in the four project languages: English, Italian, Portuguese and Spanish.

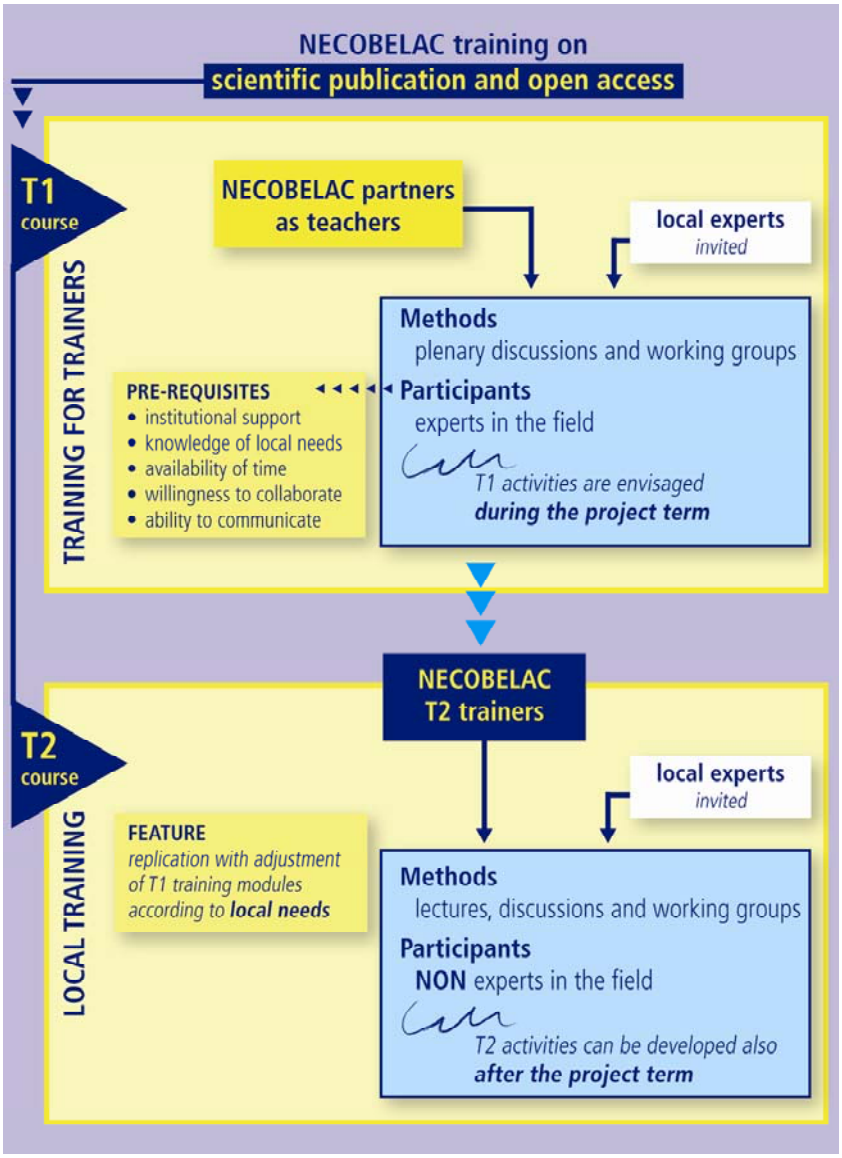

Figure 1. NECOBELAC two-level training strategy: training for trainers (T1) and local training (T2)

3. *Networking and cooperation activity*

Since the very beginning of its activities NECOBELAC project aimed to promote, improve and strengthen networking activities between European and LAC countries. More precisely, the network approach has been conceived as a means to stimulate the production of information tools and the development of infrastructures relating to health activities performed by scientific institutions acting in the countries involved in the Project. As a matter of facts, the concept of a networking space covering both institutions and individuals has been considered pivotal to develop a global public health scientific information flow based on high-quality reference standards. In this sense, national and regional institutions were called to play a critical role either as producers or intermediaries or users of information in the domain of public health.

This activity is intended to develop a community of institutions able to promote the diffusion of health information and, at the same time, develop joint research activities
An online sample survey was first planned to have an initial scenario of the areas where the project would operate. The survey was intended to collect data on scientific and academic public health institutions to be involved in the NECOBELAC capacity building programme, including data on their publication output and training activities in scientific publishing (the survey is available in four languages at http://www.necobelac.eu/Surveys/necobel.htm). The responding institutions were then invited to take part in the NECOBELAC training programme for trainers.
The network was developed as a consequence of the contacts established among participants in the training activities and following the initiatives promoted for a progressive aggregation of European and Latin American institutions within the project objectives.
When supporting local training activities (T2) for scientific writing and dissemination of health information, the NECOBELAC network also promoted new scientific collaborations in public health and related disciplines among institutions of the two interested geographical regions.
A discussion list, a newsletter and social network activities were also planned for up-dating the NECOBELAC community on events, initiatives and publications related to the project themes and contribute to developing the network.

PROJECT OUTCOMES

A general overview of the project activity is reported according to the three methodological action lines envisaged in the project strategy: two level training strategy, training tools, networking and cooperation activity.

Figure 2 shows the countries/institutions where T1 and/or T2 training activities were performed and which were involved in the network.

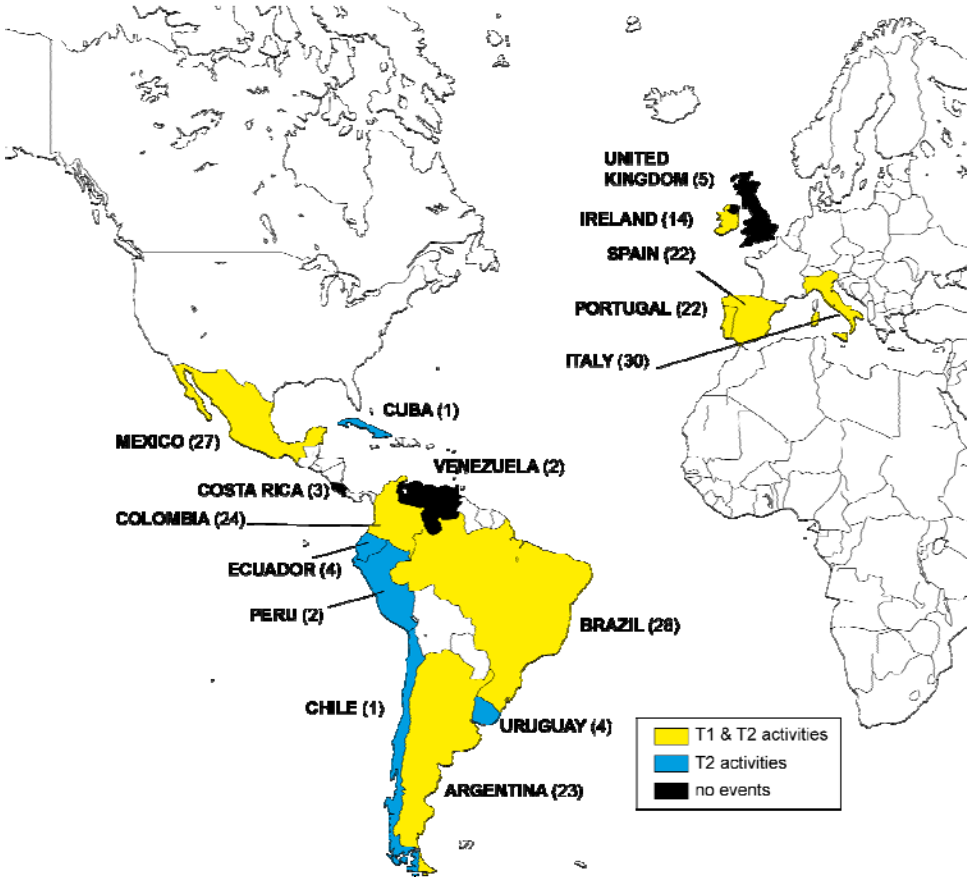

Figure 2. Countries involved in the training activity and network (in brackets number of institutions involved)

Two-level training strategy

Eight training courses for trainers (T1) were realized from April 2010 to May 2012 (Table 1) attended by over 200 participants. The programmes of training courses were slightly different one from the other although the core modules on scientific writing and OA publishing were always present in all courses and the duration was always three days (except for the T1 course held in Dublin, one day, which was followed by three webinars).

Table 1. NECOBELAC training courses for trainers (T1) in the years 2010-2012

Place	Date	Lead organizing partner
1. Sao Paolo, Brazil	13-15 April, 2010	BIREME
2. Rome, Italy	18-20 October, 2010	ISS
3. Bogotá, Colombia	9-11 November, 2010	ISP
4. Madrid, Spain	28 February- 2 March 2011	CSIC
5. Buenos Aires, Argentina	16-18 May, 2011	BIREME – ISS
6. Braga, Portugal	15-17 June 2011	UMINHO
7. Guadalajara, Mexico	22-24 August 2011	ISS-ISP
8. Dublin, Ireland	9 May 2012 + 3 webinars	ISS-UNOTT

Appendix A contains the programmes of the T1 courses which, in some cases, were also supported by local institutions (T1 courses run in Spain, Argentina, Mexico, and Ireland).

After the train-the-trainer courses, 40 replication activities were performed in Europe and Latin America. Appendix B shows details of such replication activity performed in the period April 2010 – July 2012 (including title, date, place and institution). Other replication activities are already envisaged in the second half of 2012.

The programmes and power point presentations of the training courses for trainers and, when available, also of the training replication activities and other teaching material are online on the project website with a Creative Commons Licence 3.0 By-NC-Sa and can therefore be re-used without any permission (http://www.necobelac.eu/en/training.php) citing the source.

Here follow some general considerations on NECOBELAC training activities:

- selection of participants in the training activities for trainers is crucial to guarantee replication of the training activity at local level with the support of their institutions;
- contribution of local experts creates a major involvement at local level and helps balance local practices and priorities with international quality standards in public health information production and dissemination; in some cases, the presence of governmental authorities can help increase awareness in favour of the adoption of an OA policy to research results;
- necessity to stimulate participation through working groups proved to be a useful tool for active learning and results in the design of feasible training programmes at local level;
- useful information on national and local practices and initiatives provided by participants in the courses helped highlight local differences and common requirements and, accordingly, adjust the project strategy for a more focussed offer of training tools and modules;
- participants in the training courses for trainers need to be supported by the project partners, operating in their geographical area, for replication of the courses at local level;
- production of promotional printed material (leaflets, posters, bookmarks, etc.) helps disseminate information on the project, in addition to the fact that such documents are available online. Participants in the training activities also appreciate receiving NECOBELAC printed material (e.g. the "Guide for trainers") to become more familiar with the project training strategy and with online resources (NECOBELAC topic maps) in order to use them in the replication activity.

In the T1 course in Bogotá, the active and close interaction between NECOBELAC project partners and the course attendants led to the drawing up and signing the Declaration of Bogotá, a position paper stating the need of sound policies promoting the quality of science communication and information process in LAC countries and outlining the commitment of the whole NECOBELAC community in this respect. The Declaration is now available in the four project

languages on the Project website (www.necobelac.eu) and is included among the Declarations in support of OA (http://oad.simmons.edu/oadwiki/ Declarations_in_support_of_OA).

An online feedback questionnaire was administered to the participants in all T1 courses immediately after each event, in order to assure the maximum survey response rate possible. The questionnaire was designed using LimeSurvey, an open source online survey application, and was structured into four parts concerning personal data, an overall course assessment, a judgment on logistics and duration of the course, an in-deep evaluation for each module envisaged in the course programme and a final evaluation regarding the impact on future professional activities.

Results from the survey were in general quite satisfactory in terms of participants' involvement, lively and critical discussion on the debated topics and useful suggestions and comments regarding the replication of training activities at local level. The responses to three core questions of the survey revealed a general positive assessment of all T1 courses with respect to the following points: 1) utility of the training course, 2) learning of new concepts and 3) methodology adopted in the course (Table 2).

Table 2. Survey on T1 courses: best evaluation (%)* provided by participants per country

Parameter	Brazil	Italy	Colombia	Spain	Argentina	Portugal	Mexico	Ireland	Mean
Course usefulness	92	100	100	95	100	100	100	93	98
Learning of new concepts	83	100	100	94	93	100	95	79	93
Agreement with project methodology	70	100	93	89	90	91	87	71	86

* expressed by the answer formulations: very useful/useful; yes, definitely/yes somewhat; strong agree/agree

Besides, relevant parameters relating to the adequacy of the training material and the duration of the course were investigated. As a result, the response rate percentage relating to the attendants who favourably assessed training material as adequate for their needs was equal to 91%, whereas the length of course was rated as about right by 67% of attendants. Respondents' suggestions and comments reported in the LimeSurvey questionnaire revealed good acquaintance of the two main topics addressed during the course: scientific writing and OA. However, some comments pointed out the need to deepen the topic of scientific writing and publication and to increase practical activity in this regard by organising dedicated working groups during the course. It is also worth mentioning that, in general, comments reporting lack of interest in OA issues and lack of institutional adherence to OA policies were more common in European countries rather than in LAC ones.

The outcomes of replication activity (T2 courses) carried out by attendants to T1 courses were evaluated through an online questionnaire administered to them in 2012. Among the initiatives organised in their own institution to spread out the T1 contents, formal training courses and seminars represented the most part and were addressed prevalently to researchers and scientists. As far as the material on the NECOBELAC website used to support the activities, respondents declared they had mostly used topic maps and ppt presentations delivered by Project partners during the T1 courses. Regarding the first steps taken in order to set up an institutional repository and developing an OA policy in their own institutions, the response rate percentage was 36% and 51%, respectively. About the increasing of articles published in OA journals, there was a positive response in 29% of cases. Along with these data, some interesting issues relating to the crucial points as setting up repositories, developing OA policies and

monitoring of papers published in OA journals were raised by respondents. They mainly refer to the need of improving the function of repositories by providing tailored services and offering support for publishing to the internal community. Great efforts are also devoted in planning OA policies by involving both research staff and managers on the benefits of the OA paradigm.

Training tools

All project partners contributed to the development of the NECOBELAC training tools and provided support in carrying out replication activities. The results achieved can be summed up into two basic activities: topic maps (development, translation and use), and support to trainers.

Topic maps

The development of NECOBELAC topic maps required different stages. The initial stage consisted in the representation of knowledge on scientific writing and OA publication through general and specific topics; this task was also facilitated by the results of an initial online cloud-storming questionnaire utilized as a screening process for identification of terms and concepts related to those issues and to determine their weight within different targets. Figure 3 and Figure 4 display such knowledge representation showing different interconnected categories and sub-categories within the topic maps. Part 2 of this report contains a detailed description of topic maps.

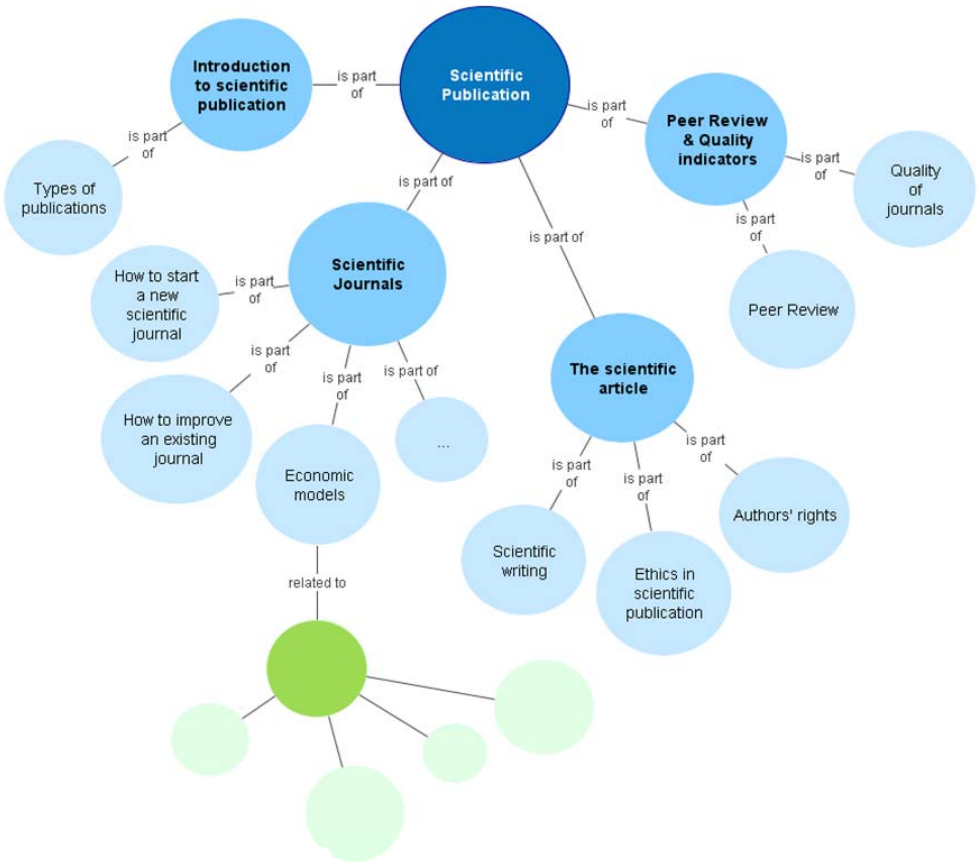

Figure 3. NECOBELAC topic map on scientific publication

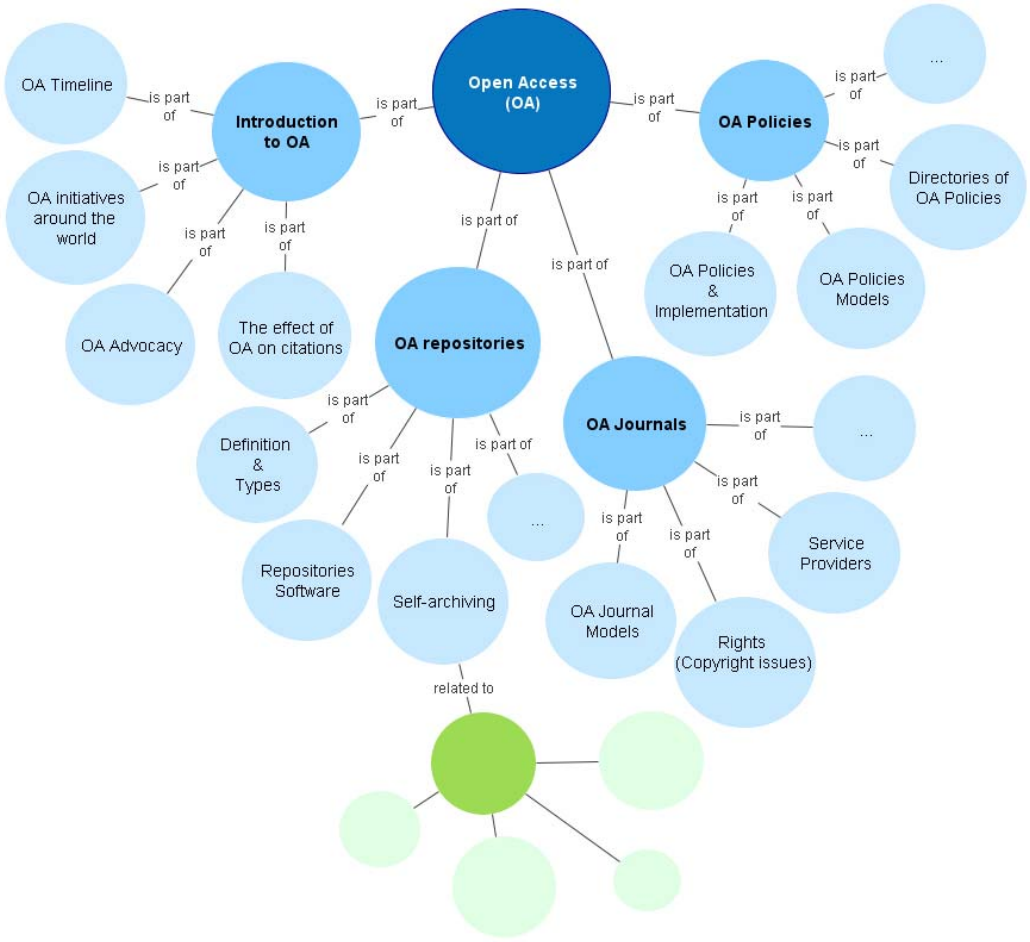

Figure 4. NECOBELAC topic map on OA

Support to trainers

This action has been developing through different tools, mainly the creation of online and printed material described below, as well as direct contacts (e-mails, teleconferences, and *vis à vis* meetings) to help NECOBELAC trainers in their replication activity. Furthermore, the project partners sometimes took part or directly organized T2 activities.

Abstracts of the basic modules

The booklet, prepared for the first training course for trainers held in Sao Paolo (Brazil) in April 2010, contains the abstracts of the basic modules included the course. Such basic modules were repeated with minor adjustments in all NECOBELAC training courses for trainers.

The booklet was intended to focus on the main issues that would be presented during the course and at the same time it was conceived as a useful support tools to help attendants in their role of future trainers – developing a customized programme at local level (T2). A brief profile of the NECOBELAC trainers was also included in the booklet, as well as a list of online resources. The booklet was produced in English (Figure 5), Spanish and Portuguese.

Figure 5. Abstracts of the basic modules

Booklet "NECOBELAC project. Guide for trainers"

The guide for NECOBELAC trainers was realized at the beginning of the project training activity in the four project languages to be used by new NECOBELAC trainers in their training replication activity at local level as well as for those who have specific interests in the project training strategy and contents (Figure 6). The guide contains specific information on the two level training strategy (courses for trainers and training replication at local level), the training tools (topic maps), and the training modules related to scientific publication and OA both including issues for discussion and suggested online resources.

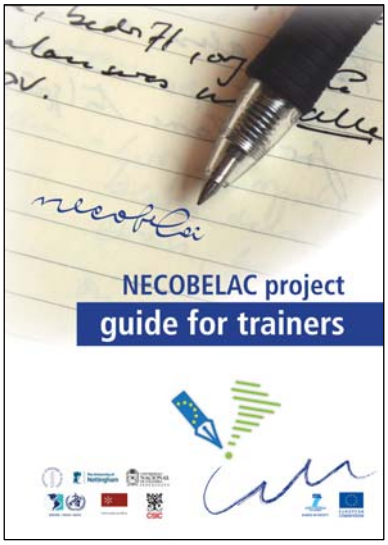

Figure 6. NECOBELAC guide for trainers

Guide to use the topic maps

The guide (produced both in textual and audiovisual format) was intended to help trainers become familiar with the structure of the topic maps and the best way to use them as a support tool for training. It reproduces the screens and provides a step by step explanation of how concepts are related, how to search in the topic maps, how to have access to schemes and other resources and how to extend text to have a complete description of the module. It is available in English and Spanish.

NECOBELAC memo card for trainers

The memo card is a tool to help NECOBELAC future trainers to realize training activity at local level (Figure 7). The aim is to stimulate the new NECOBELAC trainers to utilize all the project promotional and training tools, also available online, for a better organization and effectiveness of their training replication activities as well as to favour a wider project impact at local level.

Figure 7. NECOBELAC memo card

Networking and cooperation activity

The network of European and Latin American institutions involved in the project activities, starting from the initial project partner nucleus, has been continuously increasing as a result of the training initiatives and parallel actions undertaken to develop the NECOBELAC community. The initial online survey, performed from October to December 2009, at the early stage of the project, was answered by 79 institutions in Europe and LAC countries and was important to establish a baseline of information about the activities of institutions to be involved in the network with respect to research outputs (in terms of publications) and training courses in scientific writing and OA.

A concrete evidence of this effort to create a NECOBELAC community is represented by the list of individuals and affiliated institutions available under Contacts & Community from the Project website home page (http://www.necobelac.eu/en/frmcommunitytoNET.php). Table 3 provides a synthesis of institutions included in the network per country.

Table 3. Countries affiliated with the Project within the European and LAC geographical areas

Country	N. institutions
Europe	
1. Ireland	14
2. Italy	30
3. Portugal	22
4. Spain	22
5. United Kingdom	5
Total Europe	93
Latin America	
6. Argentina	23
7. Brazil	28
8. Chile	1
9. Colombia	24
10. Costa Rica	3
11. Cuba	1
12. Ecuador	4
13. Mexico	27
14. Peru	2
15. Uruguay	4
16. Venezuela	2
Total Latin America	119
Total NECOBELAC	**212**

In the Contacts & Community section data are organized per country and stem from the lists of participants in the NECOBELAC training courses and from respondents to the initial questionnaire delivered by the Project. Then reference information gradually increased including other individuals who showed interest in the project activities and initiatives. Joining the NECOBELAC community has therefore quickly become a simple opportunity to get in contact with people sharing proposals of developing scientific collaborations among teams of researchers acting in LAC and European countries.

The total number of institutions now included in the network is 212 (93 in Europe and 119 in Latin America belonging to 16 different countries). Appendix C includes a list of all institutions.

The project strategy demonstrates how NECOBELAC has been moving on different paths to improve and promote exchange and sharing of information resources for the benefit of public health. Training in scientific writing and OA dissemination of research output is a way to contribute to a more equitable use of information resources worldwide and, at the same time, it is an opportunity to create new and long standing research collaborations in public health among the European and Latin American countries participating in the project.

The experience gained during three year activity lead us to highlight these considerations:

- All training activities, although based on a common core, must be adapted to the local needs with high flexibility to maximise their impact; the inclusion of local experts provide an added value by reporting on local practices, stimulating discussions among participants and providing a critical vision of the different scenarios.
- Group work is a basic element in training activities, facilitating active learning as well as the development of friendly relationships among participants, to promote the organization of joint local training and scientific research activities.
- The use of online resources is fundamental to empower all stakeholders, nevertheless *vis à vis* communication is a pre-requisite in the initial training stages;

- Training replication activity at local level has to be supported by NECOBELAC partners to ensure its realization and therefore guarantee efficacy. A follow-up strategy is fundamental after the realization of the courses for trainers to ensure that the participants feel supported in their role of future trainers.
- In some cases, there is lack of knowledge of successful initiatives developed in others continents, for example, in Italy the existence of the Virtual Health Library (VHS) and SciELO (SCIentific Electronic Library Online; www.scielo.org) was generally unknown. Actions finalised to create awareness on such initiatives have to be stressed to contribute promoting new channels of information diffusion.
- The sustainability of the network requires a long-term impact strategy. In particular, the online training material and experts' support should be available also after the project term to support and maintain the existing network.

The development of a technical-scientific collaboration among academic and research institutions of Europe and Latin America and Caribbean (LAC) countries operating in the sector of public health is an objective of the NECOBELAC project, which works for the knowledge improvement on the whole process of scientific publication, from scientific writing to OA publication models.

The NECOBELAC cooperation in the field of public health relies on the principles of the 1999 UNESCO (Organization of the United Nations for the Education, Culture and Science) Declaration: Declaration on Science and the use of scientific knowledge. In this view, the NECOBELAC project adopts in its action the principle that sees the scientific community committed in increasing dialogue and exchange with the other sectors of the society, promoting science in society and for society. In particular, a message of the UNESCO Declaration, which directly recalls regional and international cooperation and research network to support the construction and development of scientific research capacity of each country, is of particular relevance for the action of the NECOBELAC project in the European and Latin American countries.

The NECOBELAC cooperation adopts a bi-directional approach between Europe and Latin America that relies the similarity conditions among the cooperation partners, in the mutual recognition of skills and experiences, and on taking into account and valorise the existing cultural differences. At the same time, the NECOBELAC cooperation is a tool to reach common objectives on the base of shared principles among the cooperation partners. In this way, it realizes an exchange and mutual transfer of knowledge, data and experiences, to reach common objectives, for the improvement of scientific production and the promotion of wide information diffusion in public health through OA publication models.

The cooperation between Europe and Latin America is carried on by the NECOBELAC project through two types of activity:

- *Promotion of new collaborations*
  NECOBELAC promotes new links and collaborations among the institutions belonging to its network which was developed through the realization of the project training activities in Europe and Latin America, by involving the participants to the NECOBELAC training courses for trainers (T1) and their affiliated institutions. The network has also involved institutions that did not directly participate to the project training activities, but showed an interest for the project activities including information circulating through the project discussion list and social networks.
- *Cooperation in the field of public health*
  The NECOBELAC project supports the EU-LAC cooperation in the field of public health promoting and strengthening of existing scientific cooperation initiatives among research groups and institutions of European and Latin American countries, disseminating the

project's key messages for the diffusion of research results in OA as well as the NECOBELAC training contents. This activity has been promoted, in particular, by the two project partners performing training and research activities in public health, the ISS (Italy) and the Instituto de Salud Pública (Colombia). Some examples of these initiatives are represented by NECOLBELAC participation in:

- existing scientific cooperation between the ISS (Italy) and the Universidad de Mendoza (Argentina) focused on a public health topics, such as rare diseases and in particular infant botulism (2009);
- international network of paediatric pharmacology involving the University of Nottingham (United Kingdom), the Paediatric Hospital of Camaguey (Cuba) and the ISS (Italy) (2010).

Moreover, the NECOBELAC project favoured the beginning of a technical-scientific collaboration agreement (2011-2014) between the ISS (Italy) and the Universidad Nacional de Colombia / Instituto de Salud Pública with the goal to develop joined research activities on public health, training and mobility of personnel of the two institutions, organization of seminars on specific topics, diffusion of scientific information in public health, etc.

The project has also been involved at different levels in the following international events providing added value to consolidated activities with an original point of view:

- *1st workshop IILA-ISS*
  (Rome, 19 October 2009)
  NECOBELAC promoted the development of a new collaboration between the ISS and the Istituto Italo-Latino Americano (IILA) (http://www.iila.org). The IILA is an international organism, including 20 Latin American countries and Italy. It operates through numerous activities and initiatives with the objective to strengthen scientific, technological, economic and cultural collaboration between Italy/Europe and Latin America. Since 2009 and 2010 IILA has been contributing and participating in several NECOBELAC project initiatives. Figure 8 shows the poster of the event realized on the occasion of the international OA week in 2009. NECOBELAC partners took part in the initiatives which included also a teleconference with other European and Latin-American organizations.
- *Science picnic*
  (Warsaw, 28 May 2011)
  It is among the largest outdoor events dedicated to science having the objective to promote and disseminate science culture among the general public, in particular young people (www.pikniknaukowy.pl/2011/en). Each year the picnic is devoted to one subject. In 2011 it was "freedom" which in science is also intended as freedom of knowledge, freedom of dissemination and free access to health information to research results, prevention and cures. A large poster on NECOBELAC was hosted within the ISS stand included also other posters on specific health related topics (Mediterranean diet, cardiovascular diseases, antibiotic resistance). On the occasion of the Science picnic a NECOBELAC bookmark was distributed (Figure 9) and some NECOBELAC gadgets to those who provided the best answers to health-related questions (pens, pen drive and keychain, with the NECOBELAC logo). This kind of events proved very useful to promote scientific communication to the general public.

Figure 8. NECOBELAC collaboration with the Istituto Italo Latino Americano (IILA) (poster of the 1st IILA – ISS workshop, 2009)

Figure 9. NECOBELAC posters and bookmarks produced for the "Science picnic" in Warsow, 2011

- *23rd Annual Conference of International Society for Environmental Epidemiology (ISEE)* (Barcelona, 13-16 September 2011)
  NECOBELAC supported cooperation initiatives in the sector of environment and health within the ISEE Conference series, an important annual appointment for environmental epidemiologists (Figure 10). In this contest, NECOBELAC also contributed with a Latin American research group to build up a regional inventory of ongoing research projects in environmental health, and associated research groups and professionals to develop a Latin American network for environmental health research.

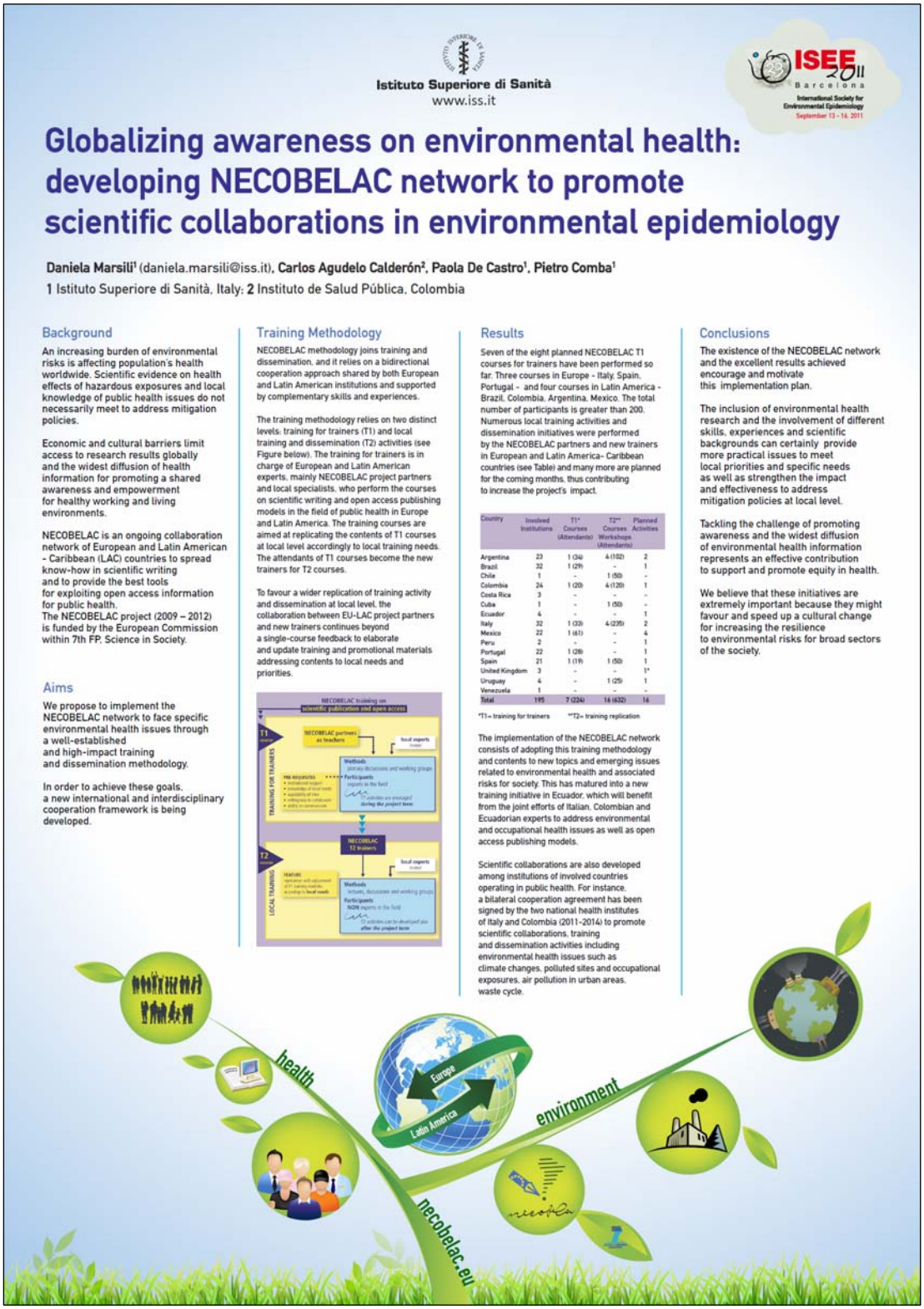

Figure 10. NECOBELAC collaboration with environmental epidemiology research (poster presented at ISEE Conference, 2011)

- *Seminario internacional "Cambio climático, ambiente y salud"*
  (Quito, 28-30 November 2011)
  In this workshop (Figure 11), Latin American and European experts addressed environmental health issues, relevant for public health both in Europe and in Latin America, such as climate changes, air pollution, industrial sites contamination, waste cycle, epidemiology of professional diseases, with particular attention to asbestos-related diseases due to professional and environmental exposures.

Figure 11. Poster showing NECOBELAC cooperation activity in Quito (Ecuador)

The workshop joined these issues with the NECOBELAC training contents to improve information production and OA diffusion in public health, with particular reference to the interdisciplinary field of environmental health. The workshop was realized in collaboration with the Italian and Colombian partners (ISS and ISP) and the Universidad Tecnólogica Equinoccial of Quito (Ecuador). On that occasion, NECOBELAC also supported new forms of technical-scientific cooperation between Italy and Ecuador in the sector environment and health.
An abstract book of the workshop presentations was also published in Italian and Spanish within a series of publications edited by the ISS (*ISTISAN Congressi* 11/C7) (Figure 12).

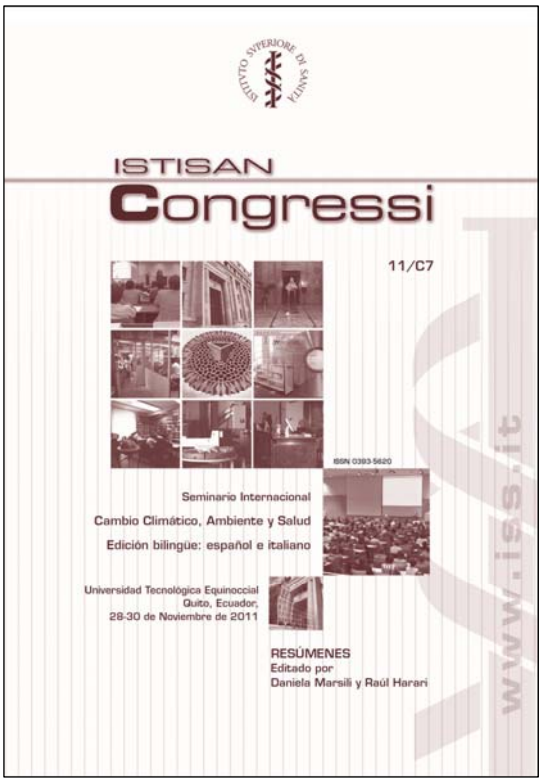

Figure 12. The Abstract book of the Seminario internacional "Cambio climático, ambiente y salud"(Quito, 28-30 November 2011)

- *EMMILE Conference on Media and Information Literacy Education*
  (Milan, 26-29 February 2012)
  NECOBELAC collaborated in the scientific programme and organization of the EMMILE conference (http://emmile.wordpress.com/), supported by many institutions and associations of international relevance including UNESCO and IFLA *International Federation of Library Associations. NECOBELAC logo was included in all conference material (programme, booklets, posters, etc. produced by the ISS). A communication on NECOBELAC strategies to produce and disseminate information in public health was presented. Following this communication and the commitment in EMMILE conference, new collaborative initiatives are in progress to promote health information literacy at international level (Figure 13).

Figure 13. Poster of the EMMILE Conference on Media and Information Literacy Education (Milan, 2012) showing NECOBELAC logo among the collaborating institutions

- *SciELO workshop*
  (Rome, 21 June 2012)
  To foster Europe-Latin America cooperation, the ISS organized a worshop on "SciELO – Scientific Electronic Library Online, a cooperative model to electronic journal publication. Opportunities to take part in the development of SciELO Italy" (Figure 14). Abel Packer, director of SciELO, presented the journal collection and discussed the development of a global SciELO Public Health, involving the ISS-NECOBELAC Project and the BIREME/PAHO/WHO-VHL and SciELO Public Health. The workshop was also intended to highlight the recent advances of SciELO as multidisciplinary collection in view of developing of a SciELO Italy collection.

Figure 14. Poster of the SciELO/NECOBELAC workshop (Rome, 2012)

The above events are evidence of the NECOBELAC project commitment to establish new forms of collaboration within specific health sectors (in particular environmental health) or in association with other events addressed to the general public. This activity proved to be very useful to stress how health information dissemination can be usefully embedded in research areas or communication events and receive major interest from participants.

Parallel to this kind of activity, the project partners took part in many conferences and workshops and associated activities within the wide areas of information management and dissemination, often organized by major professionals associations of the field such as the European Association of Science Editors (EASE), the Mediterranean Editors and Translators Association, the European Association of Health Information and Libraries (EAHIL), the series of the Berlin Conferences for OA, International Federation of Library Associations (IFLA). Some examples are reported below:

- *EAHIL 2009-2012*
  NECOBELAC was first presented at EAHIL Workshop in 2009 as a poster; then as an oral communication in the EAHIL Conference in Portugal in 2010. In 2011 NECOBELAC training activity was presented at EAHIL Workshop in Turkey as a poster (Figure 15) receiving the best evaluation from the Conference Committee.

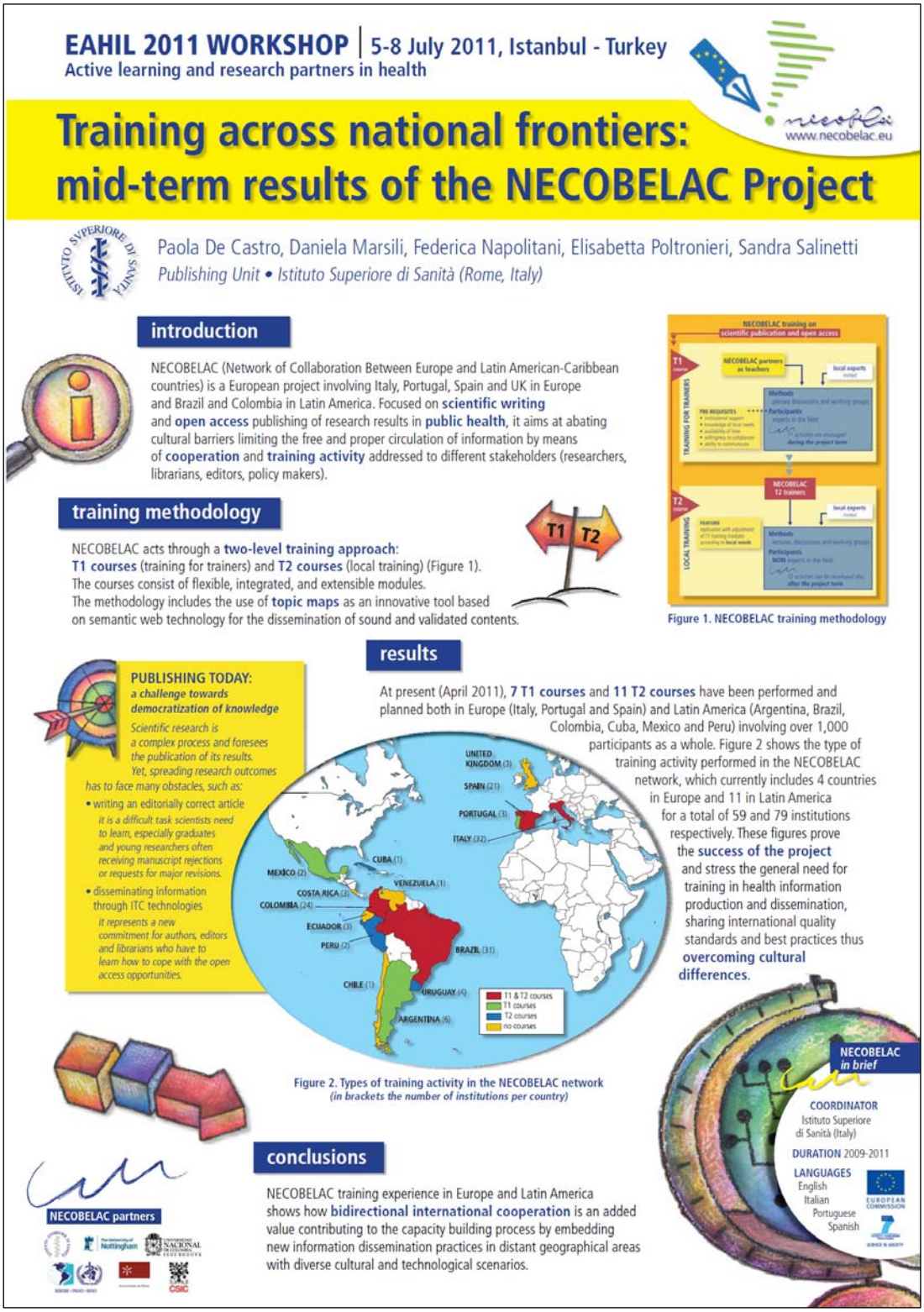

Figure 15. NECOBELAC poster at EAHIL Conference 2011, winning the prize for best poster presentation

It was therefore awarded a presentation slot, it gained a price and was published as an article in the *Journal of the EAHIL*. In 2012, soon after the project final meeting, a NECOBELAC poster was presented at EAHIL Conference in Brussels.

- *2nd International symposium on information management in a changing world* (Ankara, 22-24 September 2010).
- *IFLA 2011*
  A poster on Equitable access to health information was presented at IFLA Conference in Puerto Rico 13-18 August 2011 (Figure 16).

Figure 16. NECOBELAC poster presented at IFLA Conference (Puerto Rico, 2011)

- *PKP scholarly publishing conference*
  (Berlin, 26-28 September 2011)
- *OA Berlin conference series*
  NECOBELAC posters were included in the exhibitions of the Berlin 8 Conference held in Bejin in 2010 and in the Berlin 9 Conference held in Washington in 2011 (Figure 17).

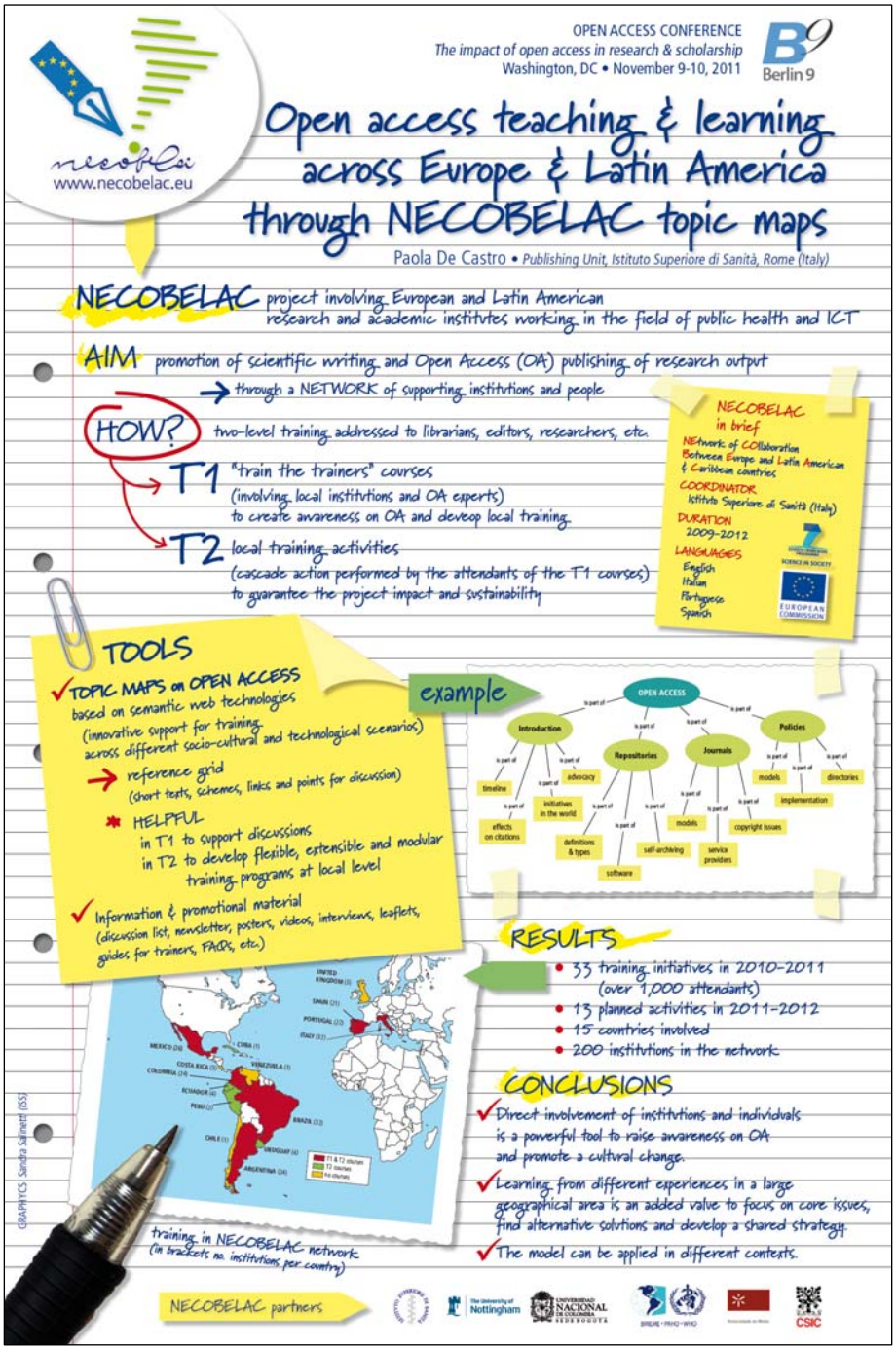

Figure 17. NECOBELAC poster presented at the Berlin 9 Conference (Washington, 2011)

- *EASE journal and Conference*
  An article on the NECOBELAC project and a note on its training activity were published in the EASE Journal (*European Science Editing*) and a poster of NECOBELAC activity was presented at 11th EASE Conference, Editing in the Digital World (Tallinn, 8-10 June 2012, Estonia).

PROJECT DISSEMINATION

NECOBELAC website

The NECOBELAC website (http://www.necobelac.eu/en/index.php) was developed in January, 2009, and went live to the public at the end of March, 2009. The central role of the website has been to form both an internal and external communication channel for NECOBELAC partners and stakeholders. For the former, the "Partner Login" allowed project partners to access the Partners' Reserved Area page, where they could access and upload documents, report drafts, meetings minutes, and other documents for internal use. The rest of the website has focused on external communication and has aimed at informing visitors about all aspects of the NECOBELAC project, providing advice and materials to stakeholders in different countries, and helping to build an informed community. In this way it has acted as a crucial resource for wider communication, since the start of the project.

The contents of the website have been made available in the project four languages: English, Spanish, Portuguese and Italian, whenever possible, though the rule of thumb was always to get the information published on the site at the very least in English, with translations following as soon as they were produced. The English version of the website was most viewed (received the most page views), followed by Spanish, then Portuguese and finally Italian.

Information was continually added and removed from the website, and changes were made in response to project partner requests and the changing needs of stakeholders. For example, the website changed to support the growing amount of information, the developing training programme of the project, and local delivery. The website includes the following sections accessible from the left-hand side menu on the home page:

- Home;
- Training Activities (course materials and photographs);
- Dissemination (publications, reports, and promotional materials);
- Topic Maps;
- Other Projects & Events;
- Contacts & Community;
- Wiki;
- About the Project;
- FAQs;
- Newsletter;
- Posters;
- Partner Login.

For each NECOBELAC T1 Course a page was created with all information related to the course, including leaflets and presentations. The NECOBELAC wiki (http://www.necobelac.eu/pmwiki/) was created to provide a home for community contributions from across Europe and LAC countries, but it was used only in the initial stage of the project.

The right-hand side menu on the NECOBELAC website provided a space to publish forthcoming courses and the latest news. This section was kept up-to-date throughout the project, and provided access to the latest newsletters, memos, and most recent posters and videos. These videos, often took the form of recorded testimonials, and were made available on the YouTube Channel as well as on the website.

The NECOBELAC website was most often used in the period immediately after training activities, when presentations, photos and videos were uploaded to the project website and

promoted. In this way the website has been integrated with NECOBELAC activities and has worked to support them. The website has attracted new visitors over the period of the project and has also engaged repeat visitors in the long term, proving to be a useful source of information for project partners and stakeholders.

Communication through community building

Community building is an additional communication tool used in the project. It was hoped that the building of the NECOBELAC community would create an informed and active group of stakeholders. These stakeholders were identified as including: academic authors and researchers, librarians and information professionals, senior institutional administrators, funding agencies, medical practitioners, publishers, learned societies, patients and the general public. The creation of an informed and self-supporting community was seen as critical for the sustainable development beyond project funding boundaries. Peer-to-peer contact and peer-support was also seen as essential, and project staff has worked to support this over time. The community building activities have consisted of:

- *Creation of NECOBELAC e-mail discussion list*
  Created at the beginning of the project, it had over 300 members.
  Approximately 1-2 e-mails were sent out each day in the first two years in order to share information on NECOBELAC as well as more generally on OA, public health, institutional repositories and scientific writing issues. In the third year a selection of useful information was sent once a week. This list was essential for the distribution of NECOBELAC course resources, the promotion of conferences and events, the sharing of research articles and other studies, and the exchange of experiences. The discussion list was an important resource used to engage the community in the project. The growing number of members, as well as the positive feedback that members sent through the discussion list, mainly from Spanish and Portuguese colleagues, demonstrates strong network consolidation.
- *Use of OA mailing lists*
  Such as the SPARC Open Access Forum, the American Scientist Open Access Forum (now Global Open Access List – GOAL), and the Open Science Forum (Lista Latinoamericana sobre Acceso Abierto y Repositorios, LLAR, OS-REPOSITORIOS, E-REVISTAS, IWETEL, EASE forum list, CIBER News and other international lists). The messages shared on these lists included a project description and information on future events.
- *Development of stakeholders lists*
  Lists of researchers, practitioners, and other stakeholders, in fields related to NECOBELAC, created so that face-to-face meetings might be arranged in order to discuss the possible coordination of project goals.
- *Dissemination of project posters*
  Sent out to medical schools and other relevant institutions in European and Latin American countries, as well as made available for download from the website.
- *Creation of a wikipedia article*
  Produced to help to disseminate information about the NECOBELAC project.
  The article is available in English, Portuguese and Italian and describes the project's details, goals and management. It makes reference to training courses and FAQs.

– *Development of social networks*
  Social networks, in the form of a Facebook page, a Twitter account, a LinkedIn network, and a YouTube Channel were created. They were used to share relevant information about the NECOBELAC courses and support the network of partners and stakeholders.
  The Facebook page and a Twitter account for the NECOBELAC project were created in February 2011 and have both been used to disseminate video testimonials, photos, course presentations, course materials, course information, and other relevant information. The number of active users of the Facebook page increased around the time of each T1 Course, with page views, as well as feedback, such as comments and 'likes' increasing in this time period.
  Since the introduction of Twitter, there has been a good rise in its use, with the numbers of followers almost doubling over an eight month period. These two social networks have proved to be effective communications channels for the NECOBELAC project.
  The NECOBELAC YouTube Channel was also created in February 2011, and it has been used to share testimonials about the courses, as well as other project videos. There have been a large number of channel views the channel holds 30 videos which have been viewed over 2,500 times, indicating good use of this communication channel. Sharing videos has been a positive experience and has allowed for many different stakeholders to share their experiences of the NECOBELAC courses.
  A LinkedIn account was created for the NECOBELAC project in October 2010. NECOBELAC connections have grown over time and there has been an appreciable amount of e-mail traffic arising from LinkedIn contacts.
  A NECOBELAC group within the EXIT directory (http://directorioexit.gtbib.net/) for professionals related to OA and scientific publishing was also created.
  All of NECOBELAC social networks have shown an increase in use from their establishment, with good overall levels of use. Social networks have acted as important communication tools for the NECOBELAC project and community, and the approach of having a number of differing dissemination and support channels, including social networking, allowed the project to have a greater reach.

– *Support of repository establishment*
  Libraries seemed the most logical contact point for supporting the establishment of repositories and it was decided that they would be contacted and offered support in setting up collaborative groups that could sustain local, in-country collaborative work. E-mails were sent to libraries and repository managers (and equivalent post-holders) in Latin American countries, to enquire about the possibility of starting networks, similar to UKCoRR in their own countries. Partners also sent e-mails to potential key contacts for policy development.

Promotional material

The production of the promotional material for the NECOBELAC project is an aspect strictly related to the project communication and dissemination activity with the aim to promote wide information and a dialogue among internal and external stakeholders of the project.

This material had a communicative objective to give information and to favour awareness on the project thematic field and, at the same time, to contribute at building the perception of the quality of the project activities.

Most material was produced in the four project languages (English, Spanish, Italian and Portuguese) and was finalized to:

- present the project aims, strategy and activity as well as project partners and the funding scheme within the European Commission;
- facilitate the access to the project outcomes, to the NECOBELAC website, including the project publications and the training contents realized by the project partners and containing the NECOBELAC conceptual maps as well as the trainers presentation in the courses for trainers performed in European and Latin-American countries;
- stimulate interest and links with other projects, in particular European projects, operating for the diffusion of the research results in OA in Europe and Latin America, through the diffusion of the project outcomes in national and international conferences, seminars and events in which the project partners have been involved.

Posters and booklets of the NECOBELAC project

Posters and the booklets on the NECOBELAC project were produced to present the project and the partners as well as the objectives, activities and opportunities provided by the project (Figure 18). Most posters were produced in four languages.

Figure 18. NECOBELAC promotional posters and booklet in English

The final poster showing the results of the project activities was produced in July 2012 in four languages. The poster in English is shown in Figure 19. Some figures relating to training replication and dissemination activity changed in the following months.

Figure 19. NECOBELAC final poster in English (July 2012)

NECOBELAC video in four languages

The NECOBELAC 3-minute video presents the project in four languages (Figure 20).

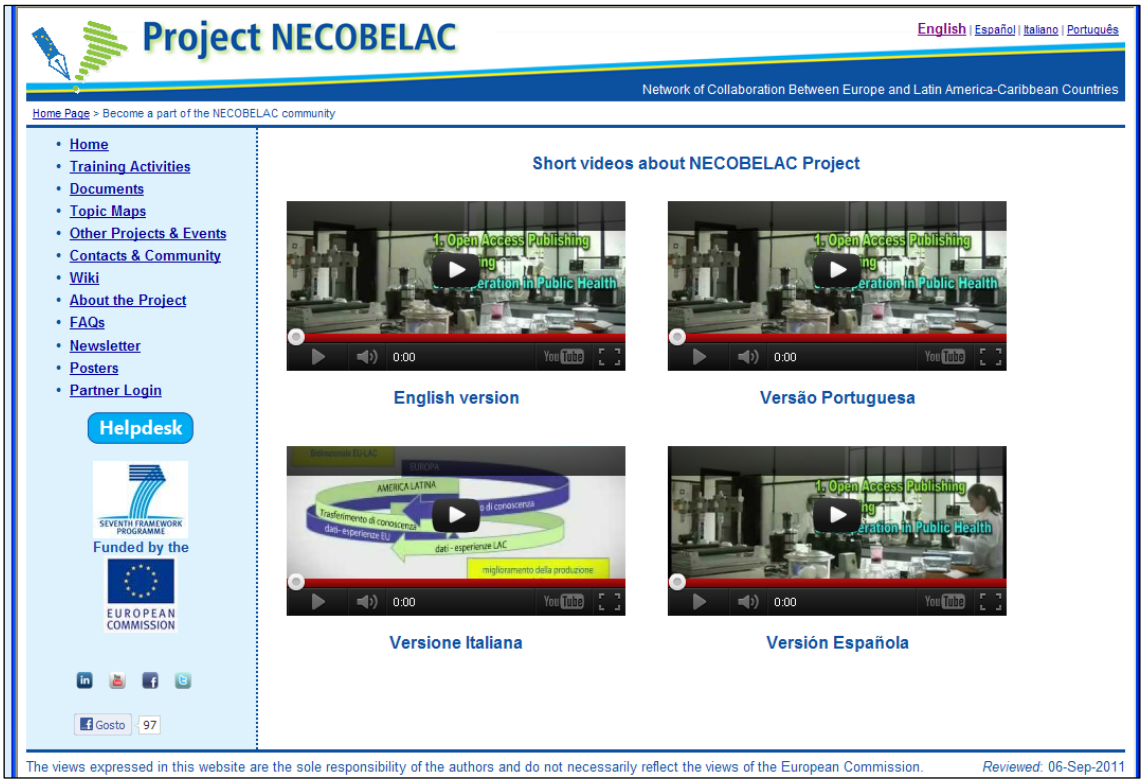

Figure 20. NECOBELAC video in four languages available from the project website

The video contains the Project objectives, tools and opportunities for the EU-LAC collaboration.

This video has been produced in order to be utilized during the training courses for trainers as well as by the new NECOBELAC trainers in the training replication activities at local level to facilitate the understanding of the project and provide information on its aims.

Booklet "NECOBELAC project: some questions to understand it"

This booklet, realized in the four project languages, contains a series of questions which help to easily understand how the project works (FAQs, Frequent Asked Questions). It is based on the online FAQs (Figure 21).

The questions and related answers are divided into three groups concerning:

a) training activity and methodology based on two training levels (T1 and T2);
b) major project tool in support of the training activity, i.e. NECOBELAC topic maps;
c) NECOBELAC community and development of technical and scientific collaborations.

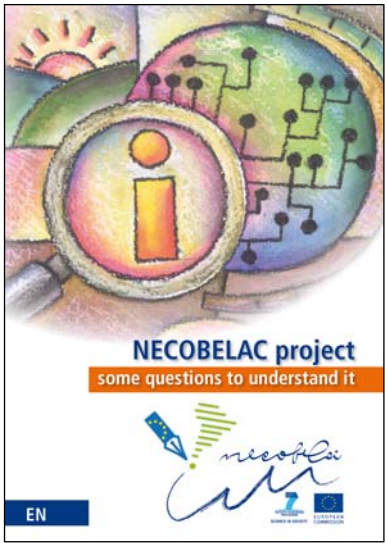

Figure 21. NECOBELAC booklet based on the online FAQs

NECOBELAC bookmarks

Five editions of bookmarks were realized to encourage a wide diffusion of the project key messages and the website link, and contain specific information on the project training activity The first bookmark focuses on the training activity performed during 2010-2011 and the others refer to those performed and planned during the 2011-2012 (Figure 22). The last project bookmark reports the overall training, cooperation and dissemination activities (Figure 23).

A: 1st bookmark **B:** 2nd bookmark **verso of A and B** **C:** 3rd bookmark **D:** 4th bookmark **verso of C and D**

Figure 22. NECOBELAC bookmarks (recto and verso sides)

recto verso

Figure 23. Last NECOBELAC bookmark (recto and verso sides)

NECOBELAC newsletter

The idea of a project newsletter (Figure 24) was developed to spread in a quick and easy way useful information on the most recent and future project activities both in Europe and Latin America. Ten issues were produced in the period April 2011-July 2012.

Figure 24. The first and last issue of the NECOBELAC newsletter

The newsletter provided information that may be useful to the growing NECOBELAC community and suggested possible contacts and relationships among institutions and individuals of EU-LAC countries (e.g. training courses for trainers and local training activities, including virtual courses, partners participation in national and international conferences and events, initiatives supporting the development of the EU-LAC cooperation involving academic and research institutions of the two regions operating in the field of public health and related disciplines.

NECOBELAC gadgets

Some NECOBELAC gadgets were created to help disseminating the project activities and resources, in particular:

- a pen drive reproducing the project logo was designed and distributed during the T1 courses containing the PPT presentations of the NECOBELAC training modules;
- a bag with the NECOBELAC logo and project title and website was designed to carry project papers and other documents;
- a set of blue pens and key chains with the project logo and website were created for distribution at the mentioned "Science Pic-nic" in Warsaw, as a prize for winners of the "science games" therein organized by project partners.

Publications resulting from the project

The publications produced in the period 2009-2012 include: journal articles and brief notes, newsletters, posters, and presentations in national and international conferences. The most recent publications are first in the list.

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EVALUATION AND FINAL CONSIDERATIONS

This final chapter summarizes and evaluates the overall project activities in terms of objectives and results achieved in the three year period and suggests perspectives in the long term.

General project evaluation

The NECOBELAC project set out to develop a cross-institutional network that would deliver an international programme of training and awareness raising activities around scientific writing and OA publishing in health sciences. The regions involved in the cooperation were Europe and Latin America.

The project's original objectives were:

- application of shared strategies to be adopted among EU and LAC partners according to the project aims; this strategies will be regularly revised during the project term;
- strengthening of networks of institutions operating in both EU and LAC countries
- creation of a cross-national support structure under the common goal of removing any sort of restrictions to scientific knowledge such as lack of information tools, legal and technical barriers;
- analysis of data, collected through sample surveys addressed to local scientific bodies, on ongoing initiatives like training programmes on health information production, dissemination and use, and digital archives implementation plans;
- realization of organic training activities stimulating the application of common principles and good practices in producing high-quality information tools and in favouring OA initiatives as means of innovative publishing models (such as the development and experimentation of IT tools to build-up digital archives),
- identification of critical issues in producing and gaining access to health information in LAC countries as compared to the European experiences.
- regular assessment of the project activities also through external peer review.

These objectives represent an ambitious programme by any set of measures. It involved collecting data on the state of play in each target country with respect to OA and the scientific publishing activities in those countries, to set the scene for detailed work. It included developing and delivering a training course programme of a 'train the trainers' nature: the courses were presented in local languages. The project also involved the development of: training materials that could be used by the trained personnel; advocacy materials to be used by project partners and training course beneficiaries; surveys and other instruments to collect and collate feedback from the courses; networks of collaborative activities that would persist after the formal end of the project.

The overall evaluation provides evidence of the successful outcomes of the project. In general the NECOBELAC has achieved its objectives, at least in the most part, and positive outcomes are shown in this report.

Further positive impacts in the longer term, after the completion of the project will surely come since all people involved in the network (including over 200 institutions) committed to replicate activity at local level.

The project training tools and advocacy material will remain in the website for three years after the termination of the project (then they will be available in the ISS website) and they can

be used and re-used by all course attendants (over 1000 people in Europe and Latin America). Furthermore, additional training courses and other OA support initiatives will be organized after the project termination, adding value to the three-year activity records.

In synthesis, the projects objectives were realized with full satisfaction of all partners. Results are measurable through the training courses, the production of training tools, cooperation and dissemination activities, as well as through the project deliverables. They can be briefly summarized as follows:

- *Training courses*
  Eight train-the-trainers courses and 40 local training replication activities were realized in Europe and Latin America. Figures on replication activities will continue to increase also after the project termination.
- *Training tools*
  Topic maps on scientific writing and OA publishing were realized in four languages and are available on the website.
  Training support tools (guides for trainers, guide to use the topic maps, abstracts of the training modules and memo for trainers were also realized in four languages)
- *Networking and cooperation activity*
  A network of 212 institutions supporting the project objectives was created involving 5 countries in Europe and 11 in Latin America.
  New collaborations in scientific fields were set in particular in environmental epidemiology, rare diseases, paediatric pharmacology.
- *Dissemination activity*
  The dissemination activities realized in different channels were:
  - 51 publications (including journal articles, newsletters articles, posters and oral presentations),
  - 10 issues of the project newsletter
  - a project video in four languages, booklets and other promotional material
  - 30 interviews to course participants and project partners.

  Figures will continue to increase also after the project termination.

The project (i) adhered to its planned programme of activities, (ii) successfully created a working partnership of organizations across a number of EU and LAC countries, and (iii) identified and developed a network of key stakeholders in target countries. This is a set of working relationships that can continue as an outcome of the project.

The wealth of training materials created by the Project are available for re-use by anyone, and furthermore that they are available in several major languages. Such materials were created specifically for trainers to use and the helpful Guide that orients them around this material.

Figures related to training and dissemination activities, as well as data resulting from the project survey are evidence of the size and success of this programme of the NECOBELAC strategy.

The networks and benefits created across LAC and EU countries will continue also after the project termination and new agreements and training initiatives will be organized within the existing networks.

A direct correlation of the project's effects on the number of articles published in OA journals is not be possible now, but we are aware that this is a longer-term outcome that may need to be monitored for some years before the true effects of the project can be measured.

The project might lead on to further activities, support other projects, or any plans built directly on the NECOBELAC work in the future.

The socio-economic impact of NECOBELAC project includes several aspects closely related to its specific nature, such as:

1. integrating multidisciplinary skills from information professionals and scientists in the field of public health;
2. joining experiences from European and Latin-American countries;
3. strengthening the process of capacity building addressed to young researchers and academics to improve their literary production and diffusion;
4. raising awareness among librarians and ITC people about the importance of setting up sound information infrastructures;
5. stimulating the statement of open access policies at local level in view of becoming active parts of regional networks;
6. widening the horizons of health information literacy of citizens thus promoting the progress of knowledge in the context of the global challenges affecting the current society, in a multilingual and multicultural approach.

Final considerations

Experience gained by the project partners in document production and distribution in the field of public health within European and LAC countries was one of the strengths of the NECOBELAC project. Partners were selected on the basis of their recognized excellence in information production and dissemination; in fact, they are experts affiliated with valuable academic and research bodies, capable to use their contacts and experience in the field to develop a sound network of collaborating institutions.

The project approach offered great advantages to European and LAC countries by increasing bi-directional exchanges and sharing of experiences, tools and strategies and by creating awareness on the issues at stake, promoting advocacy on OA models and new aggregations among institutions and countries. This approach will have a positive impact on all stakeholders involved in the information transfer process, since OA guarantees free and unconditioned access and dissemination of information through the net without geographical or economic barriers. In this regard, it was pivotal that Spanish and Portuguese speaking countries were involved in the Project network, in order to counterbalance the prevalent production of documents in English. This helped stimulating an original local production and the subsequent use of relevant “hidden” research for the safeguard of public health. In line with this a cross-national support structure of the Project, the NECOBELAC website and in particular the NECOBELAC topic maps on scientific writing and OA publishing, provided key resources in four languages for local stakeholders which can be adapted with flexibility to their own needs within their own countries. The project website represented a key point of contact for stakeholders, providing a communication hub between peer groups in different countries and providing outreach and information on the Project objectives and contents.

Moreover, one of the strengths of the NECOBELAC Project resulted in using existing technologies in order to carry on activities in view of immediate progress. Given the large geographical area concerned and the cultural differences between partners, language barriers and general communication flows have been managed properly. As a consequence, a mutual change of experiences and knowledge has favoured common efforts and cooperation among countries and institutions. This may represent a starting point to enhance sound awareness on the importance of a cultural change in the production and access of high-quality health information.

Developing a coordinated strategy towards a cultural change required significant work on advocacy and community engagement. The impact of the project has been maximized thanks to the strong involvement of all stakeholders: researchers, institutional librarians, information specialists, policy makers, funding agencies and continuous support action provided by project partners to local activities fostered by the Project. Within this framework, all NECOBELAC dissemination material and publications represented an added value to the activities performed throughout the Project thus contributing to increase the overall project impact.

Focusing on one subject discipline as health, which represents a global issue, resulted to be a strategic choice as the OA paradigm is particularly welcome in order to maximise the visibility of research outputs. This may be considered a milestone to really affecting the development of health information communication and build durable links between European and LAC countries.

The project strategy showed how NECOBELAC has been moving on different paths to improve and promote exchange and sharing of information resources for the benefit of public health. Training in scientific writing and OA dissemination of research output was a way to contribute to a more equitable use of information resources and, at the same time, it was an opportunity to create new and long standing research collaborations in public health among the European and Latin American institutions participating in the project.

Thanks to the NECOBELAC strategy focused on spreading quality health information standards and best practices, through training, networking and dissemination, all the actors involved in the production and dissemination of relevant scientific data joined to share concerns and solutions in view of a balance of interests among different stakeholders. This shared effort raised awareness about some critical points mainly represented by the economic aspects of the OA publishing model.

Part 2
NECOBELAC topic maps

TOPIC MAPS AS TRAINING TOOLS

The core activity of the NECOBELAC project was to organize training to transmit and share knowledge about scientific writing in health sciences and OA to scholarly publications in Europe and LAC countries. To that end, the project has developed and implemented training modules associated with topic maps. Such topic maps, based on a semantic web technology, were designed and developed as a support to the NECOBELAC training courses.

Why topic maps? The project had several main requirements: the training had to be sustainable, based on open standards and open source software, flexible to adapt to its specific users and contexts, allow good scalability and compatibility to accommodate the growing number of information resources; each course had to be modular, extensible, flexible, portable and able to be re-purposed; its content was to be independent from presentation and accessible through different contexts, systems and platforms. Finally, the platform should be compliant with the web standards. The web is evolving to an integrate information space where not only the existence of resources, but also the relations between them is fundamental.

Standards are being created for the codification of these relations, one of them being the topic maps, which allow the combination of existing resources in different environments. This will lead to systems that are not isolated, but share information and knowledge. The extra effort, from the use of emerging technologies in the field of web semantics, is justified by the greater flexibility of the information generated.

Topic maps are a standard for the representation and interchange of knowledge, with an emphasis on the searchability of information; topic maps are also meant to provide new powerful ways of navigating large and interconnected corpora; a navigability and inference through semantic structures improves the recovery of not only information but also knowledge. Topic maps also allow graphical knowledge representation to enhance learning and teaching and graphically illustrate relationships between information (Figure 25).

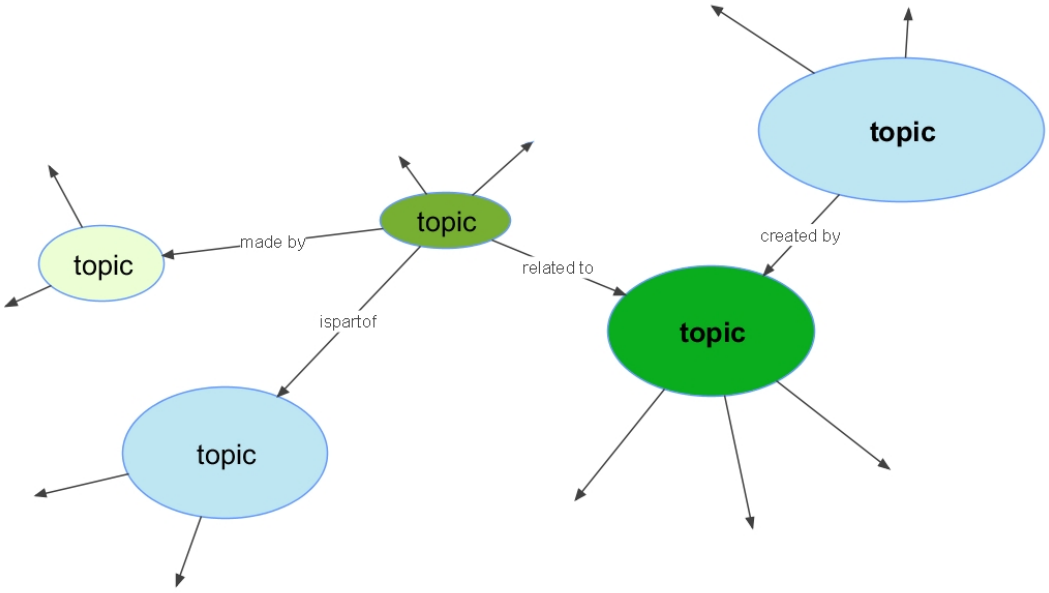


Figure 25. Graphical representation of relationships among topics in the maps

They encourage understanding by helping users to organize and enhance their knowledge on any topic and help them learn new information by integrating each new idea into their existing body of knowledge.

Topic maps can act as a high-level overview of the domain knowledge contained in a set of resources. They can serve not only as a guide to locating resources for the expert, but also as a way for experts to model their knowledge in a structured way. This allows non-experts to grasp the basic concepts and their relationships before diving down into the resources that provide more detail, and to filter the information set to create views adapted to specific users or purposes. For example, such filtering can aid in the management of multilingual documents, management of access modes depending on security criteria, delivery of partial views depending on user profiles and/or knowledge domains, etc.

The online material created to support training activities rests on the concept of "topic maps" and Ontopia technology (www.Ontopia.net). A topic map represents information using topics (representing any concept, from people, countries, and organizations to software modules, individual files, and events), associations (representing the relationships between topics) and occurrences (representing information resources relevant to a particular topic).

Scientific publication and OA related modules are represented by NECOBELAC topic maps which graphically show the structure of both subjects and the relationships among their concepts. At the same time they provide a semantic search database, where the users will be able to send semantic queries (Figure 26).

Topic maps have been created using the Ontopia technology as the framework to offer a graphical visualization of the structure of training modules, representing explicitly their relationships and the relationships among the different factors, actors, and initiatives involved.

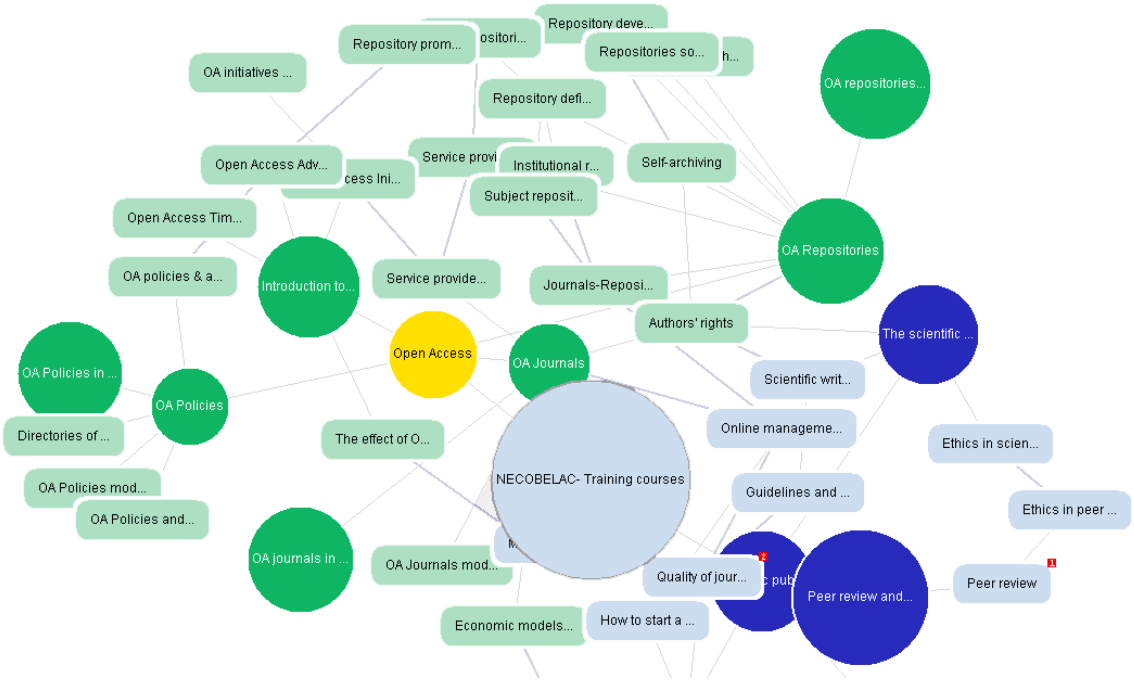


Figure 26. Representation of the NECOBELAC topic maps including some modules associated to OA issues and scientific publications

They provide not only a map editor but also an internal navigator (onnigator) and a visualizer (vizigator). This allows the export and import of maps in different formats and works within the RDF framework, which allows its portability and semantic retrieval by search engines. Ontopia has also a navigator framework that is a JSP (Java Server Pages) tag library and Java API which enables develop web-based interfaces based on topic maps the web dynamic pages. The training modules are accessible through the web, as a whole or as constituent parts.

The ontology of the maps has been created partly with Dublin Core and Fedora own ontologies adding some other association terms. The relations are modelled and described using RDF. Associations and role associations among topics, type of instances and their occurrences have been conceived taking into account most of the issues involved in scientific publications and OA. Within the NECOBELAC topic maps any topic represents a module or sub-module corresponding to the contents of both subjects: scientific publication and OA in public health.

A web interface has been created based on topic maps, a semantic searchable database was also developed, where the users are able to send semantic queries to this knowledge structure. Any unit/module web page has a similar structure: title, abstract, scheme, extended text, some questions or points to discuss with trainers, bibliography, examples and a list of support materials.

Development of NECOBELAC topic maps

NECOBELAC topic maps, based on two main interconnected subjects, scientific writing and OA to scholarly outputs, have been generated according to the following steps:

1. elaboration of a list of topics;
2. establishment of the relationships among them;
3. definition of the topic map ontology (topic types, occurrence types, association types, role types and name type);
4. definition of the structure of topic occurrences;
5. completion of the information;
6. creation and design of the web dynamic JSP pages and search engine throughout the whole content in the map.

The first and the second steps were done by creating a free list of terms/concepts related to the main subjects; the list was revised several times after cleaning up of redundant terms, and synonyms topics, and establishing the relationships among them with the aims of focusing and covering any issue related to them. After this iterative process an interconnected representation was constructed with all topics covered and their associations (Figure 27).

The third and fourth steps included the selection of those fields to define the content of the topics occurrences and include it in any of the four languages (English, Italian, Spanish and Portuguese): title, keywords, abstract, content (schemes and texts), subjects for discussion, web resources and related literature. Texts were written by NECOBELAC partners according to their experience and working fields.

The website was based on the defined ontology and the topics occurrences. Pages are created dynamically, i.e. any update in the topics is incorporated in the portal. As a result, all pages have the same structure as displayed in Figure 28.

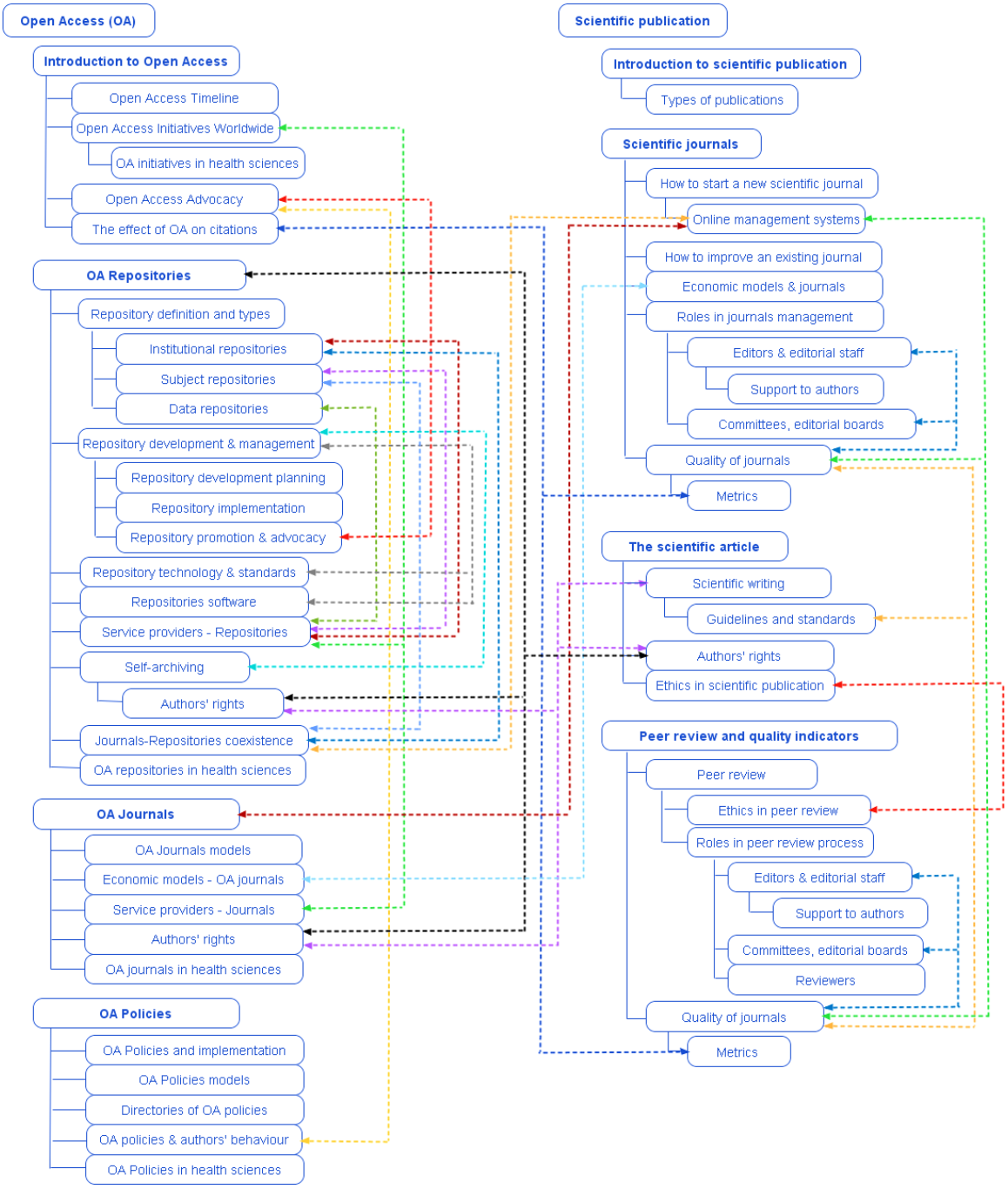


Figure 27. Interconnected representation of selected topics and their associations

Figure 28. Example of a topic map page within the OA modules

From topic maps to units of learning

The creation of several types of content, generated by all partners in different languages, and the bulk of materials resulting from the courses permit to explore new paths to organize such contents by packaging them in different ways.

Based on the diversity of the content and the plurality of the stakeholders, including different types of institutions and countries, specific learning paths should be defined to be used by trainers and students in different contexts.

Another consideration regards the need of learning content adapted to the requirements of distance learning education, especially in eLearning.

As a result of the project activity, NECOBELAC generated different types of content: topic maps, e-learning videos, course presentations, course documentation, FAQs, wiki, etc.

To ensure a real use of the contents produced by project partners, it would be helpful to have different combinations and ways of using these contents, based on the real needs in each specific context, and not based on the whole structure of the topic maps.

The proposed concept is to create examples of eLearning packages of the modules contents, reusing the existing topic maps texts and others contents of the project to create a delimited learning unit based on a particular aspect of the topic maps structure.

The following example, based on a part of the topic maps, the OA structure, can be devised into one smaller Unit of Learning (UL), which will be available as a module of content, to achieve a specific objective (Figure 29).

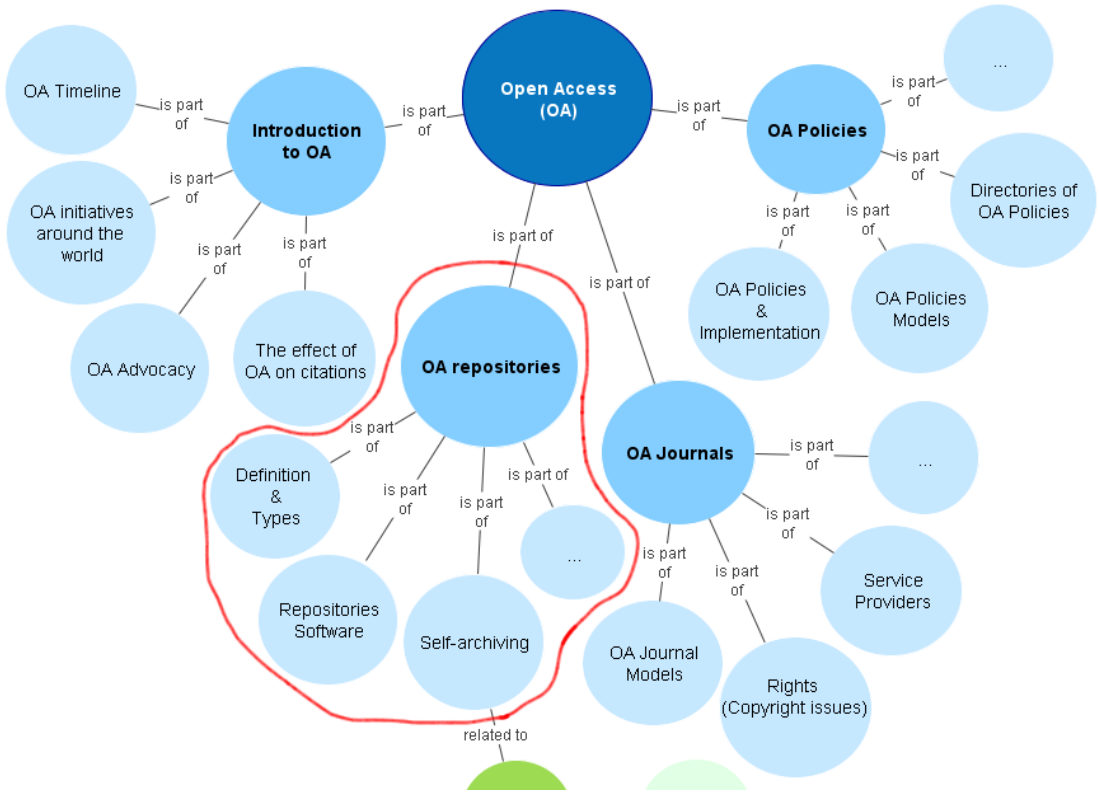


Figure 29. Example of selected topics to create a unit of learning on OA

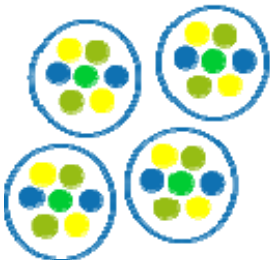
The advantage of this approach is the possibility for the community to build specific contents based on their particular needs and share the created content with others having the same needs.

The NECOBELAC role in this task is to create examples, share the contents and promote their reuse.

Before packaging the learning contents, it is important to define some specific concepts related to e-learning environment. Table 4 shows the different levels of aggregation.

The NECOBELAC project provides two examples of UL and different formats of the same content.

Table 4. Different levels of aggregation of learning contents

Content representation	Content description
	*Learning Objects (LO)* LO are individual objects that can be used for learning. They are already included in the NECOBELAC website, but other LO can be added. A LO can be image, schema, video, sound, etc.
	*Units of Learning (UL)* UL are the aggregation of LO with at least one objective. The e-learning packaging standards should be used to be compliant with Learning Management Systems (i.e. SCORM, IMS-CP, CC). This is the recommended use of the contents in the NECOBELAC project. It can correspond to one or several nodes of the topic maps. Different UL can be created. They should be short and have few objectives to be used in different contexts. Some course presentations can be adapted to create UL.
	*Courses* They are the aggregation of UL to comply with the objectives of a course. The output is a structured course. This must be done by each institution and can be achieved by combining different UL.

How to create a unit of learning

To create a UL, a free authoring tool is proposed: eXeLearning (http://exelearning.org). The eXeLearning is an open source application to assist trainers, teachers or academics in the publishing of web content without knowledge of HTML or XML markup. This step can be achieved also with other authoring tools.

The most important thing in this step is to define an objective based on the real needs of the students. After that, and based on the topic maps structure, the nodes you want to approach should be limited and a sequential structure of these contents delineated.

It is important to comply with the following structure:

1 – Introduction

- Learning objectives
- Pre-requisites
- Topic maps

It is important to explain the objective of the UL, defining what the learner will learn.
If needed, define also the prerequisites for the UL and finally identify in the topic maps structure, where this UL will be interconnected.

2 – Contents

- Sub-contents
- (…)

It is related with all the learning content based on the topic maps texts.
If possible, complement the content with local information.

3 – Evaluation

It is related to the self-evaluation of the UL. The learner will answer some questions to evaluate if there is a correspondence with the defined objectives.

How to distribute a unit of learning

After the creation of a UL, there are lots of ways to distribute the same content. eXeLearning tool can export the content to:

- SCORM;
- IMS-CP;
- Common Cartridge;
- Website;
- Other.

The first three export formats are only suitable for eLearning platforms (LMS). They can be used in almost every LMS compliant with these standards. Figure 30 shows an IMS-CP on a Moodle platform for a possible course in Portuguese.

Another option to share on a website is the Website exports. This format exports a folder with all the UL content to be viewed as a mini website.

Figure 30. Example of UL in Moodle for a possible course in Portuguese

TOPIC MAPS ON SCIENTIFIC WRITING

The publication process involves many activities stemming from information selection, the choice of the appropriate channels to disseminate such information, manuscript production and handling, submission for publication, peer evaluation, and other editorial activities which eventually lead to the document publication, distribution, use and impact evaluation. The publication process is complex and requires the knowledge of rules, standards and best practices in order to be carried out effectively.

There are different types of publications (books, journals, grey literature, etc.) and different channels to distribute them. The publication process involves many actors whose roles may overlap depending on how the process is structured by the particular publisher. In large organizations where budgets are sufficient, each role may be performed by an appropriate specialist; in small organizations where budgets are limited and there are fewer papers to process, the same person may play different roles.

The main actors of the editorial chain are: authors (as information producers), editors (as information "tailors"), publishers (as information managers), readers (as information consumers), and librarians and information specialists (as information aggregators). These actors are supported by reviewers, copy editors, translators, technical writers, graphic assistants, photographers, printers, web masters, etc. who provide their expertise at different stages in the publication process. Again, one person may also occupy different roles in different contexts. For example, a reader may also be an author, or a reviewer of an article and this can add complexity the scientific publication process.

Topic maps on scientific writing can be grouped under four main modules:

- M1. Introduction to scientific publication
- M2. Scientific journals
- M3. Scientific articles
- M4. Peer review and quality indicators

M1. Introduction to scientific publication

Scientific knowledge needs to be communicated in order to permit progress, and avoid useless duplications of work and unnecessary expenditures.

This module contains a historical review of the development of journal publication through the centuries. Journals, in fact, traditionally represent the main channel of scientific communication, despite the existence of other media, both oral and written, which are commonly utilized to communicate research results in different contexts. Furthermore, scientific journals play a basic role in the research evaluation process which is strongly related to the allocation of research funding.

The editorial process leading to the creation of a journal article is briefly outlined, with a description on the roles and responsibilities of the main actors involved in journal production and dissemination (Figure 31). The new opportunities offered by information and communication technologies are described considering that such opportunities could help to create a new balance in favour of the most peripheral areas in the scientific information arena. The online directories and databases that include OA public health journals help to provide information on the existing scenario.

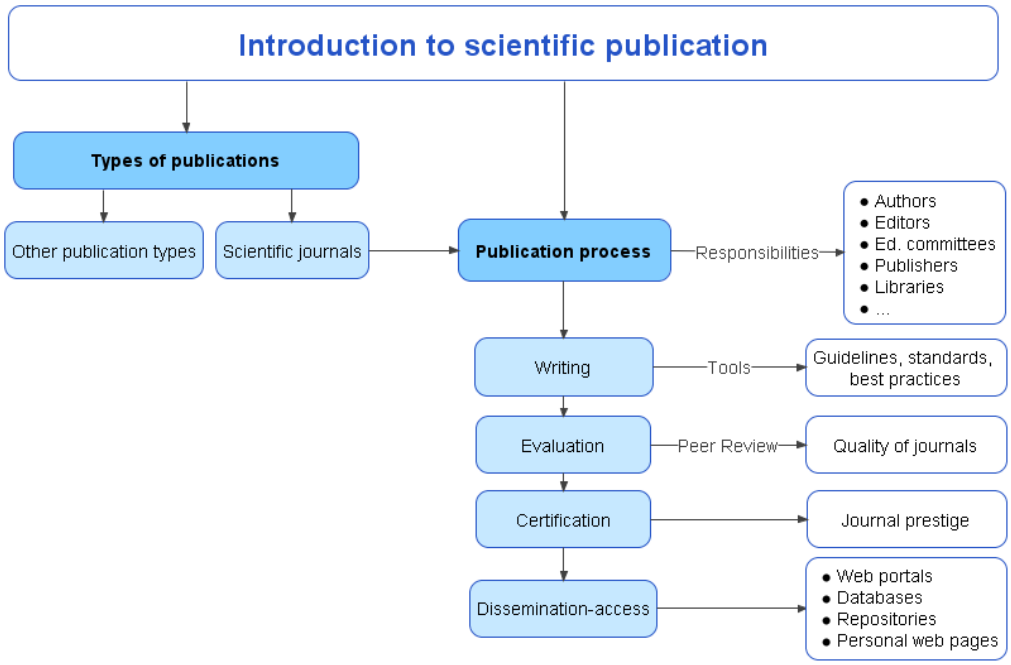


Figure 31. Scheme: introduction to scientific publication

Over the past few centuries scientific communication has used a variety of different routes, from philosophical dissertations in the academies, through the development of journal publications in the 17th century (also thanks to the new print medium), to the production of the commercial journals of the 20th century. As scientific communication has changed different responsibilities have arisen for those involved in the process, and new hierarchies have emerged. Various centres of power were developed and commercial publishers are now playing a central role. In this scenario, authors are obliged to sign copyright transfer agreements to have their papers published, libraries have to pay higher and higher subscription fees to maintain their collections, the ISI impact factor gains a privileged position for science evaluation to the detriment of small or peripheral journals.

In the 1980s, the Internet revolution starts upsetting the established routes of scientific publications providing new opportunities for all parties at stake and challenging the existing balance. We are now living in "spaces of flows" where the traditional publication models of the previous century are deeply affected by the OA movement, supporting free online access to scientific publications and offering unexpected opportunities for scientists "on the periphery".

OA starts from the idea of maximizing scholarly communication system thanks to the new technologies, and quickly opens up new possibilities for the future evolution of science. It brings about a novel system of communication, including both information and data; it offers new metrics for scholarly output and at the same time helps scientists to spread and share their research, gain immediate visibility and directly participate in the global scientific debate. This does not mean, however, that all barriers are easily abated, but that we are moving towards new forms of communication which may offer extraordinary opportunities for all.

Today journals still represent a precious source of information whose quality should be guaranteed by the editorial process, and in particular by the peer review process assuring that the content of an article submitted for publication is valuable.

The publication process is complex and involves the activity of many actors (authors, editors, reviewers, publishers, etc.) who should comply with established editorial rules,

guidelines, standards and best practices. Nowadays most of guidelines are available online, and they have reciprocal links, and this helps to be easily informed and theoretically to comply with all established procedures, although other factors may prevent the strictest application of guidelines. Journal editors also publish "instructions to authors" which, in some cases, are very detailed (and linked to other sources) thus representing very useful tools to produce an editorially correct article. A list of Instruction to authors in over 6,000 journals in the health and life sciences is available from http://mulford.meduohio.edu/instr.

Subjects for discussion

- What is the role of scientific journals?
- Where does the responsibility of a journal article lie?
- How can editors guarantee quality in publication?
- Where can you find instructions to authors?

Types of publications

Scientific communication can be addressed to different audiences depending on the purposes of the piece and utilize different channels of dissemination. The same information can be circulated among peers to spread advancement of research and receive feedback, or to the general public, for example, to promote healthier life styles, to administrators to receive financial support or promotions, or to policy makers to propose the adoption of new regulations. The information authors wish to convey should be properly tailored to their needs and ability to understand it correctly. There are therefore different ways of expressing the same content. Scientific journals still represent the best way of circulating research activities, but it is important to be aware of other types of publication that can be utilised for information transfer in biomedicine (Figure 32).

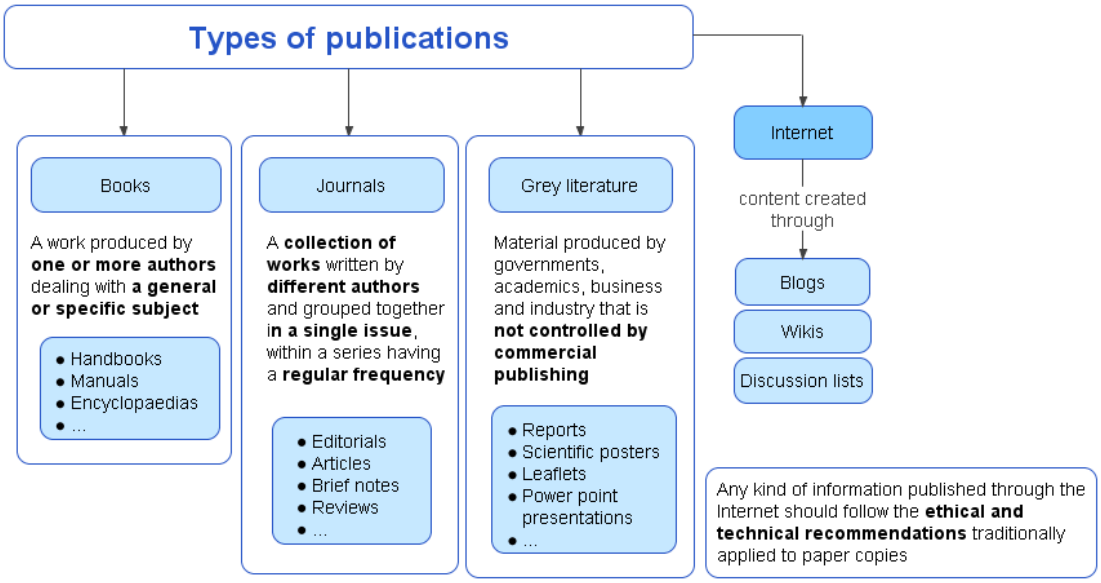


Figure 32. Scheme: types of publications

For example: books, handbooks, technical reports to provide extended data on a study in progress, conference proceedings containing papers and posters presented at a conference all are viable options for communicating scientific results. All of these types of publications follow different writing conventions; however there are basic standards which are applicable to all. This module will give hints on how to select and shape different types of written communication, journal articles will be dealt in detail in other modules.

Before starting to write any document you should be clear about why you are writing, what content you wish to communicate and to whom. Next you should decide which type of publication best suits your requirements and follow the appropriate standards and guidelines.

Of course within both the 'book' and 'journal' categories there are many different document types with specific characteristics (handbooks, manuals, novels, encyclopaedias, magazines, scientific, scholarly or academic journals, society journals, newsletters, etc.). Moreover, journals may contain many different kinds of contributions included in specific sections (editorials, articles, reviews, brief notes, viewpoints, report from meetings, etc.).

Grey literature refers to material produced by governments, academics, business and industry that is not controlled by commercial publishing: reports, thesis, conference proceedings, leaflets, scientific posters, power point presentations, etc. Until the advent of the internet grey literature was very difficult to retrieve since it was produced only in limited number of copies and it often lacked the basic bibliographic elements allowing its identification. Yet it was, and still is, an important primary source of precious and unique information in many fields.

Furthermore, the use of the Internet has created new types of document and new ways to work with data sets. Where in the past these represented only the counterpart of the traditional documents appearing in print, more recently the electronic has evolved into new kinds of material: blogs, wikis, personal internet pages, pre-prints and post prints in digital archives, discussion lists, linked data, etc.

Different consideration must be given to the documents prepared for use of the media which follow specific rules. Any kind of information published through the Internet should follow the ethical and technical recommendations traditionally applied to paper copies. Quality, clarity and consistency, for example, are a must for any type of publication, as are ethical considerations and copyright issues which apply equally to paper and electronic documents.

M2. Scientific journals

Scientific journals have three main purposes:

1. recording and disseminating the knowledge obtained from research;
2. examining the validity of research;
3. identifying the scope and possible uses or applications of research.

These roles have been constructed and perfected by scientific journals over the last 300 years until becoming the means of communication which can (through society's recognition and acceptance) publish, evaluate and validate what is published. Scientific journals thus have a set of criteria and methods guaranteeing quality and truth or well reasoned doubt regarding what they accept and publish. Authors wishing to publish the results of their investigations must therefore, firstly, know and understand the requirements and criteria insisted on by specialised scientific journals for receiving, evaluating, accepting and publishing scientific material, such author guidelines usually having been most clearly set out for prospective authors.

Starting a new scientific journal

The creation of a new scientific journal should be in response to a demand not met by the existing market, for instance, a low number of journals in a certain field. Therefore, before starting any initiative, the publishing scenario must be evaluated in the area where the new journal will be started (Figure 33).

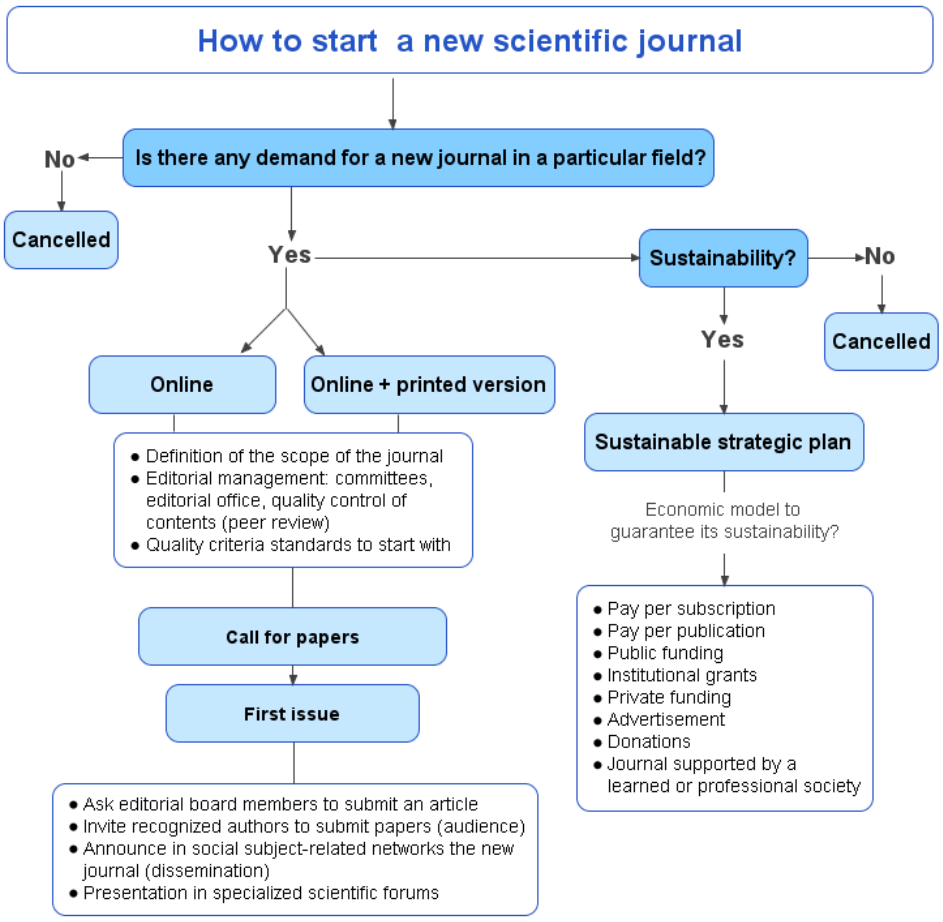


Figure 33. Scheme: how to start a scientific journal

The scientific community to whom the journal will address should also be evaluated, as should the journals future sustainability. This last aspect is very important, because if the journal is not sustainable, the initial efforts, investments, and maintenance could be worthless. The new publication must take into account matters affecting the format and content, and establish an economic model that ensures its sustainability (see module on economic models). The establishment of the editorial office, the roles of its members, the editorial advisors, managing committees or editorial boards are of extreme importance, especially at the beginning, when those advisory committees or councils play a significant role in the journal development. The editor is ultimately responsible for the publication, and therefore he/she should be a professional in the field, with existing knowledge on the scientific editing and publishing system. Starting a new journal is not an easy feat, and so it is important that the editor dedicates

a considerable amount of his/her time to its planning and organization. To aid in its development, the choice of a journal's format and quality criteria standards should follow international standards.

Subjects for discussion

- How would you draft the strategic plan to create a new journal?
- How would you attract the attention of leading authors to publish in the new journal?
- What actions or activities could serve to promote the new journal?

Online management systems

An online journal management system allows monitoring of all steps involved in publishing. This process automation can speed up the work of the editor and allows tracking of all processes from submission to publication. Existing journal management systems are usually designed to assign permissions based on the roles of the actors involved in the publication process: authors, editors, reviewers, and technical editors. Figure 34 shows a generic work flow including the main steps that an online journal management system tracks. In the publishing world there are many online journal management systems, some of them are free under different licenses, and others are commercial products developed by private companies.

One important example of these systems is the Open Journal System (OJS), developed by the Public Knowledge Project. This journal management and publishing system is often used by the scientific academic community, it has been translated into many languages and it is used by about 8000 journals.

Table 5 includes a list of online management systems, their creators and URLs.

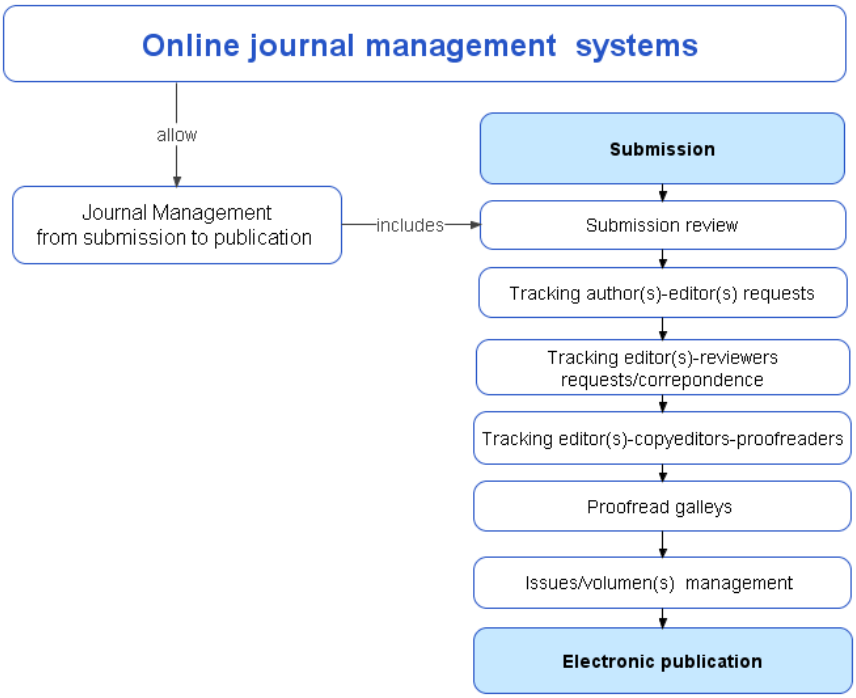


Figure 34. Scheme: online management systems

Table 5. Online management systems, their creators and URLs

Name	Creator	URL
OJS	Public Knowledge Project	http://pkp.sfu.ca/?q=ojs
Ambra	Public Library of Science	http://www.ambraproject.org/
ePubTK	Institute for Legal Issues on Free and Open Source Software	https://dev.livingreviews.org/projects/epubtk#
DPubS	Cornell University Library & Pennsylvania State Libraries and Press	http://dpubs.org/
PubMan	Max Planck Digital Library	http://colab.mpdl.mpg.de/mediawiki/PubMan
eJournal Press	AllenTrack	http://www.ejpress.com/index.shtml
PeerTrack	Aries Systems	http://allenpress.com/services/publishing/peertrack
Editorial Manager	Aries Systems	http://www.editorialmanager.com/homepage/home.htm
EPRESS	Nigel Gilbert and Stuart Peters	http://www.epress.ac.uk/
ScholarOne	Thomson Reuters	http://scholarone.com/

Improving an existing journal

The most effective way to deal with the editorial problems faced by scientific journals is to have an editorial policy and an improvement plan (Figure 35).

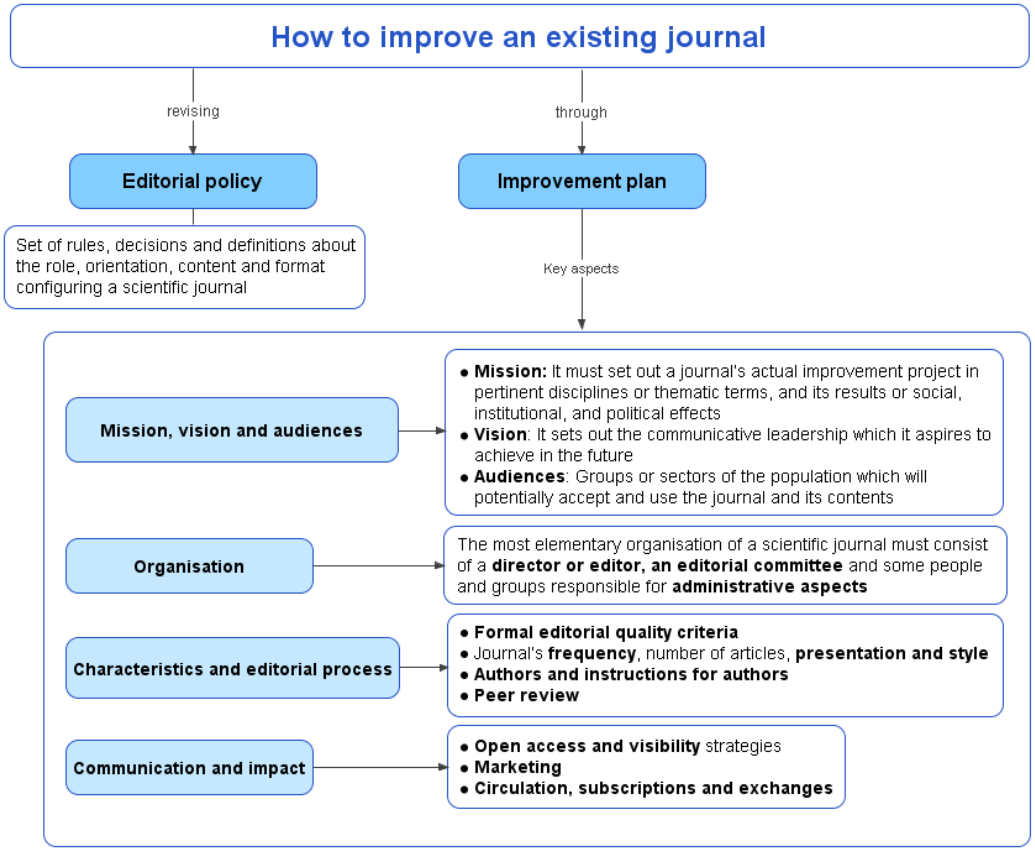


Figure 35. Scheme: how to improve an existing journal

This should link current problems with responses and expected outcomes for the future, especially those related to a journal's positioning and visibility. An editorial policy allows a journal's role to be fixed and for it to have a specific direction. The editorial policy must also have a bearing on the editorial process, marketing and circulation. A journal mission and vision should also be specified. The mission must set out a journal's current aims, and the vision should define the goals that it aspires to reach in the future. It is also essential that a journal's audience be defined (i.e. the readers who it will reach and will also act to support it). Any journal organisation should support the editorial policy and improvement plan.

Editors of scientific journals frequently identify problems regarding key aspects having a bearing on the quality of their journals (for example, editorial committee, authors, peer review, etc.). Some of these problems may have a precise resolution; however, each of them is connected to the others and requires broader approaches.

Managing a journal

The editorial process provides added value to submitted manuscripts thanks to the contribution of many actors playing different roles in the journal management and editorial process. The process depends on the type of publication and on the internal procedures the journal has implemented. For example, staff is needed to use online systems to track manuscripts, maintain communication between editors and authors, and ensure that the established editorial policies are adhered to and so on. The handling of manuscripts may be centralized in a single office or there may be assistant editors working in different fields and locations. In some cases, activities may be concentrated in a very small group or one person alone may play different roles at the same time; in other cases, there may be a large team at work for one publication or one journal issue. For peer reviewed journals, the manuscript's 'voyage' through this process may be very long and require considerable effort. This section will outline the role of the main actors of the editorial chain and consider some cultural issues which can influence the process implemented in different countries.

Editors and editorial staff

Figure 36 shows the main functions and responsibilities of journal editors and editorial staff.

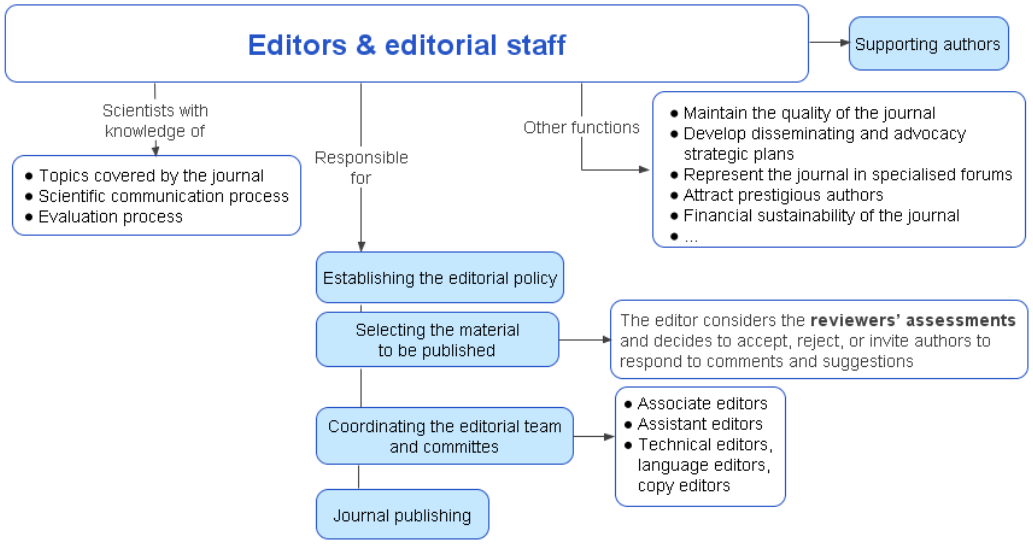


Figure 36. Scheme: editors & editorial staff

Editor (or editor in chief)

The editor (or editor in chief) is the person responsible for the publication of the journal and the selection of what is published within it. The editor is usually a researcher in the area of the journal's scope, and should also have in-depth knowledge of the publication and assessment processes.

The editor has the function of coordinating the editorial board (assistant and associate editors), establishing the editorial policy of the journal, and disseminating and advocating strategic plans to broaden the journal's visibility and diffusion. The editor is also in charge of the financial sustainability of the journal and must work to maintain a positive image for the publication, by ensuring regularity and punctuality, and by using good communication skills to interact with the actors on the editorial scene.

The editor has the primary function of controlling the manuscripts submitted for quality and fit with the scope of the journal or publisher. They also decide on the experts in the relevant field from whom they will seek assessments or review; commonly, editors seek opinions from a wide range of experts. For most journals peer review is an essential part of the editorial process.

The editor considers the reviewers' assessments and recommendations and decides to accept, reject, or invite authors to respond to comments and suggestions. The author, thus, responds to comments and suggestions and adapts the manuscript accordingly. This is, according to most editors, the slowest step of the entire review process.

Associate editors

These are the members of the editorial team who assist the editor in conducting his/her editorial duties or to whom the editor delegates certain tasks. They are usually appointed by the editor or elected by the editorial board. However, for some journals that belong to an association. Associate editors work closely with the editor to help maintain the quality of the journal and provide support when difficult decisions need to be made – for example ethical considerations. The number of associate editors depends on the size of the journal. There may be just one, or many more. They are usually senior professionals or scientists who have publishing experience (either as authors, editors, or reviewers), who are usually fully employed in their professional role, and only work on the journal on an occasional basis. Sometimes the group of associate editors is called the "editorial panel".

Commonly, associate editors are specialists in one particular area of the journal, and they take responsibility for that area: for example there may be one associate editor who deals with the continuing medical education (CME) material, or perhaps one who deals with case studies. It is common in some disciplines to have a statistical editor, who takes particular responsibility for checking this type of content in submitted papers. When a journal publishes on a wide range of topics (for example a general medicine journal), there may be a large number of associate editors, each one dealing with a particular specialty, for example oncology, neurology, etc.

Associate editors are usually expected to:

- assist the editor in implementing the policies of the journal and in monitoring the efficiency of its systems;
- correspond and work with authors and reviewers;
- review and revise papers for quality and relevance;
- recommend a course of action for submitted manuscripts in their specialist area.

Assistant editors

These are usually more junior members of the editorial team who assist the editor in conducting the editorial duties or to whom the editor delegates certain tasks. They are usually appointed by the editor or elected by the editorial board. Their work is critical for maintaining

the quality of the journal, and they need to be highly proficient in running an editorial office and good at dealing with authors and reviewers. They should have a general understanding of the subject area of the journal, but they do not need to be specialists in the area. Depending on the size of the journal, this position may be filled by a part-time person, or the journal may have one or more fulltime assistant editors.

In an academic setting, assistant editors are often interested graduate students or junior faculty members. In small journals this work is often undertaken by an administrator or secretary. Sometimes this role is undertaken by someone who provides more than administrative support to the editor, and who can also make initial decisions on whether papers are suitable for consideration.

The assistant editor is often responsible for managing the administration of the editorial office: ensuring the efficient flow of papers from submission to final decision, and keeping all members of the editorial team well informed.

Assistant editors are often expected to:

- assist the editor in implementing the policies of the journal;
- correspond and work with authors, editorial board members and reviewers;
- manage and maintain the manuscript tracking system;
- maintain records and produce reports of manuscripts received, accepted, rejected, etc.;
- communicate decisions to authors and deal with queries;
- ensure efficient flow of papers through the editorial office, and develop improvements in the management of papers.

Technical editors, language editors and copy editors

After a paper has been accepted, it may still require some work to ensure that it is accurate and easily readable. Some journals employ technical, language and copy editors to undertake this work. These positions may be staff or may be freelance individuals hired by the journal to undertake the work as required. Some journals include these tasks within the duties of the assistant editor(s), particularly in academic settings.

Technical editors are expected to advise on the content of the article and to review for clarity and accuracy – for example suggesting the writing of some sections, or recommending that a figure is better represented as a table. Many journals do not employ technical editors, and rely on the reviewers and editors to provide this advice.

Language and copyeditors ensure that the language is correct and articles are consistent, accurate and readable (i.e. understandable). For example, they may need to correct poorly expressed and grammatically incorrect texts.

Editorial board or committee

The editorial board or committee provides the executive leadership for a journal. It focuses on the short-term and long-term goals of the journal to ensure it follows the aims and scope statement as closely as possible. Editorial boards assume different roles and have different responsibilities in different journals, ranging from those of an advisory board that meets only occasionally, to those of a functional decision-making body that works closely with the editor and assists with the daily activities of the journal. This group may be also defined as “board of editors”, “editorial committee”, “advisory editors” (Figure 37).

An editorial board is an independent body which is not directly involved with the running of the journal but provides the editor with advice and feedback about the direction, scope, and content of the journal. Depending on the journal, the board may take different forms.

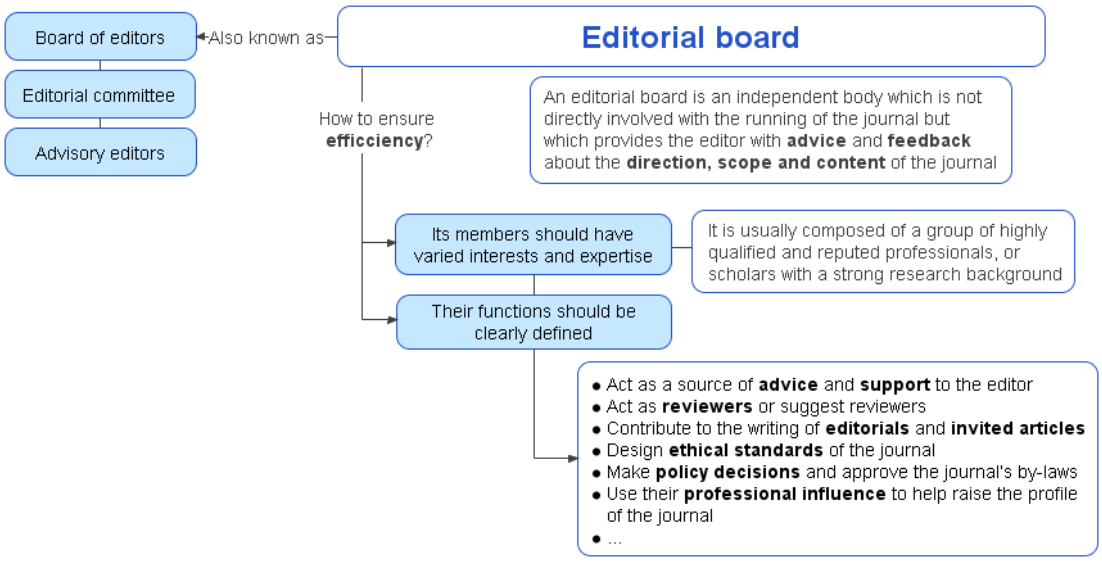


Figure 37. Scheme: editorial board

In some journals the role of the board is essentially that of a body of core reviewers, who provide advice and feedback to the journal team. They may also be asked to endorse any changes that the editor might wish to introduce to the journal, and to provide information regarding changes in discipline and suggestions for future contents. Many members of editorial boards wish to support the journal by providing advice and feedback, but are either inexperienced editors or do not have the time to work more closely with the editor, as the associate editors do. These editorial boards tend to be large, with members from around the world. Members are usually appointed by the editor.

The board is usually composed of a group of highly qualified and reputed professionals, or scholars with a strong research background. It usually includes the "working" editors as well, e.g. associate editors. By joining the editorial board they endorse the journal and the quality of the content. To ensure efficiency, the functions of the board should be clearly defined, and its members should have varied interests and expertise. The size of the board depends on the size and scope of the journal.

The term of service of a board member should be limited, in order to promote new ideas; it is common for the journal to ask people to serve for a 3-year term, which may be renewable. The board should hold periodic meetings where ideas for the structure and scope of the journal can be discussed.

The editorial board's key role is to endorse the content of the journal, including its scope and structure. They are also expected to support the editor by providing feedback and advice as required.

The editorial board is expected to undertake some or all of the following tasks:

- act as a source of advice and support to the editor;
- act as reviewers or suggest reviewers;
- discuss and solve any problems that might face the journal;
- contribute to the writing of editorials and invited articles;
- solicit articles for the journal;
- design ethical standards of the journal;
- make policy decisions and approve the journal's by-laws;

- supervise and monitor the implementation of journal policies;
- help in decision-making when reviewers' opinions on submitted manuscripts are not in agreement;
- serve as the journal's representative to the international scientific community;
- use their professional influence to help raise the profile of the journal.

Editorial policy

The editorial policy consists of a set of norms, decisions and definitions about the role, orientation, content and form that shape a journal's characteristics, as give direction to well as its publication, circulation and visibility.

Scientific journals must adopt differing editorial policy routes and paths for improving quality. Such routes are complementary.

The main routes refer to:

- mission, vision and audiences;
- organisation;
- characteristics and editorial process;
- communication and impact.

Mission, vision and audiences

A scientific journal is devoted to communication, mainly of the results of scientific investigations, objectifying scientific knowledge, storing it and making it available, based on a set of traditions and methods that guarantee quality and credibility. In order to ensure that a journal meets these goals, it should follow an improvement plan that should deal with the criteria (*see* Figure 35).

The mission and vision should not be limited to describing a scientific journal's purposes. The mission must set out a journal's actual improvement project in pertinent disciplines or thematic terms, and its results or social, institutional, and political effects. The vision sets out the leadership which it aspires to achieve in the future.

Here follow two examples of a clearly defined journal mission and vision based on quality:

- *British Medical Journal*
  Mission: To lead the debate on health, and to engage, inform, and stimulate doctors, researchers and other health professionals in ways that will improve outcomes for patients.
  Vision: To be the world's most influential and widely read medical journal
- *Bulletin of the World Health Organization*
  Mission: To publish and disseminate scientifically rigorous public health information of international significance that enables policy-makers, researchers and practitioners to be more effective; it aims to improve health, particularly among disadvantaged populations.

Both a journal's mission and its vision contribute towards defining its audience. But, what does the term audience mean?

In scientific communication, the audience is the group or sector of the population which will potentially accept and use the journal and its contents, as readers or authors.

At least three questions must be answered in order to clearly identify the audience:

1. Who are or who will be the main readers?
2. Which similar journals are used and accepted by such readers?
3. What new or different material does the journal provide in relation to similar journals?

Organisation

A scientific journal's organisation is usually directly related to its development, in terms of size, progress, and maturity. In turn, its development is expressed in certain visible characteristics: frequency, run (number of copies per edition), sections, number of articles and pages per edition and volume, plus additional aspects (graphic material, etc.). Weekly, monthly, and bimonthly scientific journals thus usually have a more complex organisation and a greater degree of development than quarterly, four-monthly and six-monthly journals. Depending on a journal's development, it could have the following editorial structures and responsibilities:

- *Editor in chief and/or editors*
  A person or multiple people responsible for managing a particular journal and the specific decision-making processes that result in its individual characteristics. The editor usually assumes the functions of chief editor or director of the journal.
- *Co-editors or assistant editors (editorial team)*
  They support and complement the editor. They may assume specific roles in regards to decision making or may assume specific functions during the editorial process.
- *Associate editors /consultants (editorial advisers)*
  They provide about the content and or direction of volumes and issues, supplements, special editions, etc.
- *Section editors*
  They assume specialised functions per section. They form part of the editorial committee.
- *Editorial committee*
  If this operates, it deals with the journal direction, its contents and at different levels the preparation (evaluation, acceptation, correction and rejections) and the editorial follow-up of each issue. When operating together with other editorial committees or groups, it mainly deals with matching each issue with a journal's annual editorial plan and its sections.
- *Scientific committee, editorial board*
  It deals with editorial direction and examines and provides recommendations about its vision and routes, strategies, approaches, and goals.

As mentioned previously, the size and number of committees depends on the degree of development and complexity achieved by a particular journal. In all cases committees should incorporate recognised and active scientists that have editorial experience not only from the country where the journal is produced, but also from abroad. The editors must produce a plan that orients a journal and ensures that editorials are produced and that the editors' opinions are expressed. Editors must also periodically evaluate the work of the committees and their members.

Characteristics and editorial process

The following must be highlighted as key elements for improving the quality of a journal from the editorial point of view:

- preparing instructions for authors;
- defining the peer review process (list of reviewers, evaluation criteria, invitation to be a reviewer or evaluator, evaluation formats, training reviewers and follow-up and evaluation of reviewers;
- identifying sections;

- defining the journal presentation and style (cover, articles, tables, figures, photos and images, etc.);
- planning the number of articles, diversification of types; requested articles and topic editions.

Communication and impact

Communication strategies are closely connected with journal impact, therefore it is critically important to guarantee full visibility of the journal though OA dissemination and marketing strategies focused on journal circulation, including social networks, as well as subscription and exchange promotion.

Subjects for discussion

- If you were to be part of the editorial committee of a scientific journal, how would you describe its degree of development?
- According to your experience, how would you define a scientific journal's editorial policy?
- When and how was the last time that the journal for which you are working defined and implemented an improvement plan?

Economic models

see also Economic models to OA journal models (pag. 141)

Scientific journals fulfil a triple role of certifying, disseminating, and archiving knowledge, in order to guarantee access to it in the present and the future. Dissemination of research outcomes is a most relevant issue since communication can be considered the essence of science.

These journals are constantly being challenged to adapt their methods of dissemination to match the ever changing ways in which people seek and use information. The growing use of the Internet, for example, has been a major challenge for traditional scientific journals, whose survival is also being threatened by the decreasing budget available for libraries; at the same time prices of journal subscriptions are rising considerably.

Technology has also enabled the development of alternative ways to disseminate and exchange scientific information more freely. These new technologies have provided ways in which libraries can continue offering access to research materials even while experiencing budgetary difficulties.

The concerns about access to research results have led many major research institutions and research funding agencies worldwide to sign declarations in favour of OA. In Latin America, SciELO is one of the most successful examples of an OA scientific journal database.

The scholarly publication system may currently be in what some would call a transition period. This period of transition between the traditional subscription model and a new OA model has started to change the roles of the actors in the scientific communication process, and additional changes are yet to come. Figure 38 provides a scheme of such economic models. As stated above, scientific journals act both to certify and disseminate knowledge. The dissemination of research outcomes is critical to the scientific community, society, and policy makers.

The attention of policy makers specifically is required for two reasons. First, it is well-established that science has a key role in fostering economic growth. Second, much of scientific activity is publicly funded: the output of research is typically not bought by journals but is 'donated' by publicly-funded researchers; so are, to a large extent, refereeing services for the evaluation of research; and, journals are bought by publicly-funded researchers or, more often now, by publicly-funded libraries. It is therefore crucial for public authorities to form a view on the relative efficiency of the scientific communication process.

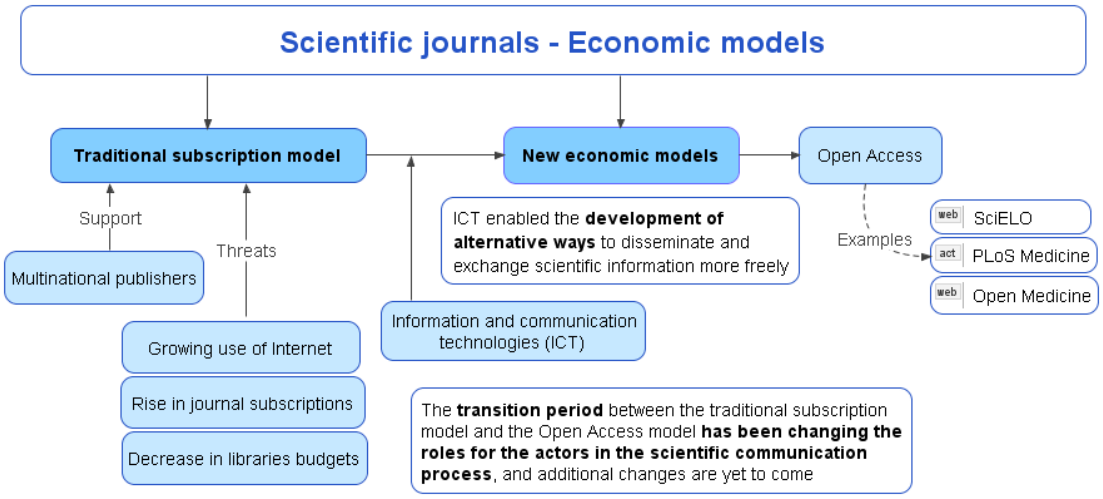


Figure 38. Scheme: scientific journals - economic models

The traditional scientific communication system considers the article as the basic unit: a result of formal and informal communication (seminars, colloquia etc.) among authors. This model fostered the development of scientific publishers that included both not-for-profit associations and commercial organizations. They produced both the primary journals and the secondary services that facilitated access to the contents of these journals through indexing and abstracting. These publishers also sold subscriptions to their printed journals to libraries and increased their revenue through page charges, reprints, and other author fees.

The traditional scientific journal subscription model has been severely challenged by the growing use of the Internet. Free and instant access to scholarly literature is increasingly expected. OA publishing, which gives free access to scientific journal contents on the Internet, is funded by means other than subscriptions. This alternative model has faced some contention, though publishers have began to experiment new economic models.

Besides the increasing use of Information and Communication Technologies (ICT) in scientific communication, there has been an outrageous increase in the price of journal subscriptions. Between 1975 and 1995, they have increased 200% to 300% beyond inflation. This has been accompanied by a fall in subscriptions both by individual researchers and by libraries whose budgets have substantially diminished. This dichotomy has negatively affected the purchasing power of medical libraries and has led to the utilization of alternative models for disseminating scientific research. Processes have changed in fundamental ways and new functionalities that did not exist in the print-based system have now been introduced. Traditional organizations are assuming new roles that will ensure their continued existence in the electronic present and future; they are also defining partnerships with other organizations in order to explore opportunities that may emerge for collaboration in the development of new services and products, for example in the cases when university presses and libraries are becoming publishers of research for some faculties. However, the traditional subscription model still survives because large multinational publishers still control the mainstream journals in most areas. Authors still wish to publish in these highly rated journals and readers still want to read the journals which publish recognized authors.

The existence of many not-for-profit publishers, which include learned societies and university presses, is changing the academic publishing scene. The Scholarly Publishing and Academic Resources Coalition (SPARC, http://www.sparc.org/) is an example of an organization that is redefining roles and addressing issues related to costs of serials while transforming scholarly publishing. SPARC is an initiative of the Association of Research Libraries which seeks to bring together scholarly publishers and associations, commercial publishers, university presses, universities, and research libraries.

Scientific publications are more widely disseminated in an author-pays system than in a subscriber-pays system; although the author-pays model seems to be less costly and it just transfers the duty of paying from the reader (i.e. the libraries and institutions) to the author (or their funder or institution).

As libraries' ongoing budgetary difficulties persist, opportunities provided by ICT continue to arise, and people begin to acknowledge that public funds play a significant role in the scientific publishing process, a movement in favour of OA to scientific information is gaining scale in the research community and within research-related organizations.

Concerns about access to research results have been echoed by civil societies and political entities at national and international levels.

In 2004 in the UK, the House of Commons recommended that publicly funding agencies require OA dissemination of publicly funded research outcomes through their deposition in authors' institutional repositories.

In the USA, the National Institutes of Health, through a bill signed in 2007 by President Bush, require that any research financed by the NIH and published in a peer-reviewed journal, be deposited in the repository PubMed Central within 12 months, making it universally accessible.

In Europe as well, several of the most important research funding bodies have established policies urging their funded researchers to publish in OA journals (and they have offered to pay publication fees) or to deposit their articles in an OA repository (e.g., UK Research Councils, the Wellcome Trust, CERN, etc.).

In Latin America, the OA movement has encountered ideal conditions to flourish. In many cases, scientific journals are published by learned societies, which freely distribute copies of the printed journals to their associates and sell subscriptions to libraries. Some of these learned societies use publicity and sponsorship to collect additional funds, however, since these income streams are not enough to cover publication costs, they still depend on government funding through national research funding agencies.

The SciELO model allies peer-reviewed scientific journal publication with bibliometric and scientometric analysis through a complete and detailed database of citation counting. More important, the inclusion and permanence of journals in SciELO depends on strict quality criteria, met only by 18% of the submitted journals. Therefore, SciELO ensures universal dissemination and increased visibility and accessibility to Latin American literature. The collection today includes also journals from Portugal, Spain, Italy and more recently, South Africa, totalling over 600 journals published in Spanish, Portuguese, and English.

Subjects for discussion

- Which are the main characteristics of the traditional subscription model of scientific journals?
- What are the reasons that have threatened the traditional subscription model of scientific journals?

M3. Scientific article

Journal articles are arguably the most important means of communicating new results to the scientific community and to promote progress in research. This module briefly outlines the main characteristics and structure a paper should have to be submitted to a biomedical journal according to the most common rules of the IMRAD (Introduction, Methods, Results And Discussion) format. It also considers to the writing styles and journals 'Instructions to Authors'.

Writing a journal article

Since communication is a crucial task for each scientist, the correct writing of a paper is of utmost importance. To help potential authors in this work, since the second half of the Sixties a scheme has been widely used among scientists to write their articles and this structure was officially adopted by the American National Standards Institute in 1979 (ANSI Z39.16-1979) as IMRAD format. In the same year the International Committee of Medical Journal Editors issued the *Uniform requirements for manuscripts submitted to biomedical journals*. This document represents – among other guidelines, standards and examples of best practices for writing and communication – the most widespread and valuable tool for authors to easily write clear reports of their studies. The "Uniform Requirements" are particularly interesting as, in addition to analysing the many facets of the editorial process, both from editors' and authors' points of view, they also describe the technical aspects of preparing and submitting manuscripts.

In the second half of the Nineties a debate arose on the appropriateness of the IMRAD format for all forms scientific communication. The formal composition of a traditional scientific paper was found to be restrictive for reviews, case reports, editorials, although still of relevance to journal articles. One of the strengths of the IMRAD structure is that it is a direct reflection of the process of scientific discovery and it has the advantage of helping the author to organize a research report in an unambiguous way following simple steps.

The acronym IMRAD is sometimes augmented to AIMRAD, where "A" stands for "abstract": a qualified paper should be accompanied by a brief and sometimes structured summary of its content as readers can decide quickly whether or not to read the full article. Most journals request also that authors provide some key words referring to the main topics of the article in order to assist indexers in cross-indexing the article.

The logic of IMRAD can be considered in a series of questions to which each section is intended to answer:

- *Introduction*
  (what was the problem and why was it considered?)
  - state the purpose of the study
  - give reasons for the rationale of the study
  - not anticipate conclusions
- *Materials and methods*
  (how was the problem studied?)
  - describe the subjects (patients, animals, etc.)
  - define methods, equipments and apparatuses used
  - illustrate procedures, techniques and methods of analysis
  - compare others methods
- *Results*
  (what were the findings?)
  - present data in logical sequence

- emphasize only relevant data

– *Discussion*
(what do these findings mean?)
- underline only new aspects of the study and the conclusions follow from them
- not repeat what has been already introduced
- not jump to conclusions not supported by obtained data.

Figure 39 shows the main steps to write a journal article.

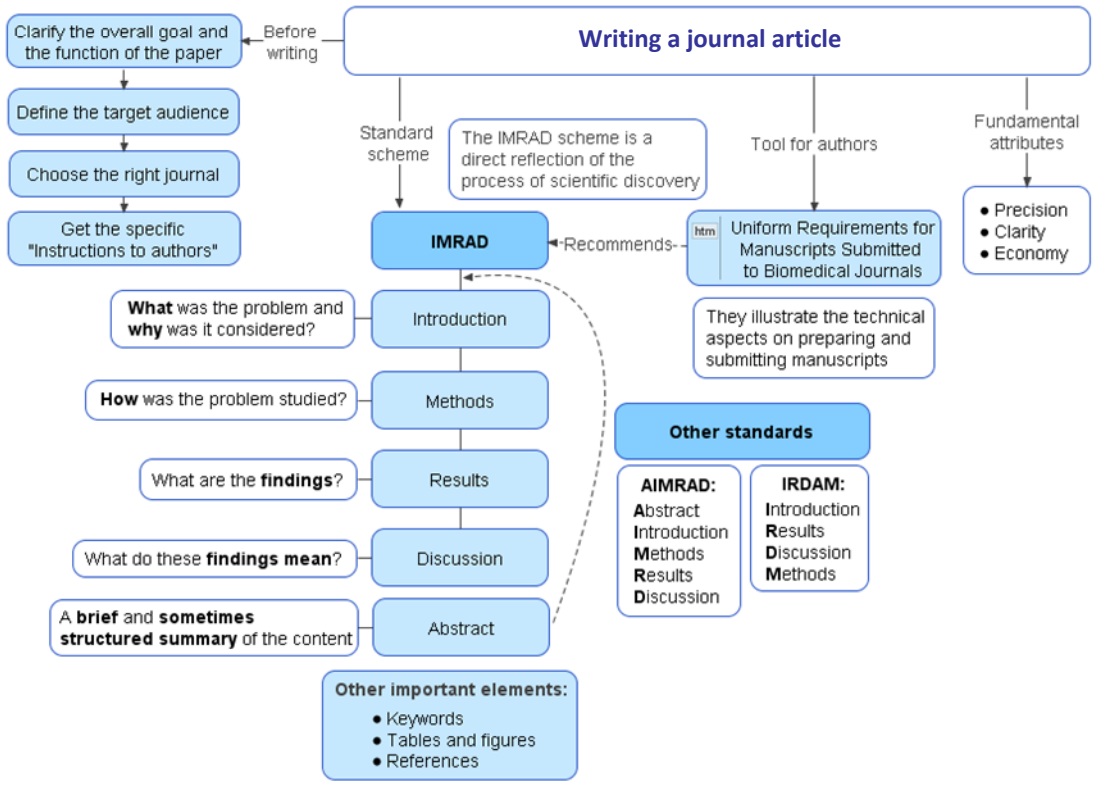


Figure 39. Scheme: writing a journal article

Other important elements, not explicitly considered in the IMRAD structure but that should be present in a paper, are tables and figures. These elements give more detailed information in a format easily evaluated by the reader; yet their number should be limited. Tables and figures should be restricted to those needed to explain and support the argument of the paper without duplicating this information. In addition to this authors should provide direct references to the original research sources whenever possible to give credits to their findings or to establish distance from those opinions.

IMRAD format works well for studies in which the experiments are planned in advance or performed in a predefined order. It therefore includes a study design subsection in the Methods section, usually at the beginning. In contrast, basic research studies often begin with a hypothesis to be tested, but beyond the initial experiment or starting point, the experiments performed throughout the study are not necessarily planned in advance. This format used by

many high impact basic research journals, such as *Nature*, *Proceedings of the National Academy of Sciences*, *Journal of Clinical Investigation*, and *Journal of Cell Biology*, is arranged so that the Results section immediately follows the Introduction. The Methods section is placed at the end, or it may even be published as a supplemental data file. This is the IRDAM format (Introduction, Results, Discussion, and Methods).

Before writing each section, authors should clarify the overall goal and the function of the paper and the audience they mean to address. The answers to these questions will help them to choose which journal to submit their paper to, decide what information to include, and select the right tone to adopt. The second step is to get the specific 'instructions to authors' of the chosen journal which explicitly state how their paper should be formatted for submission.

Apart from the specific instructions a journal provides, there are simple rules to follow regarding writing style. Authors should report their study with precision, clarity and economy starting from the title itself of an article, which should be succinct. Authors should clearly say what they mean avoiding embellishment. Scientific terminology must be used appropriately and consistently keeping away from colloquial speech and avoid ambiguity. Readers should not have to guess what an article means, prose should flow smoothly from introduction to conclusions explicitly showing the logical sequence behind any transitions from one concept to another. Readers, editors and reviewers appreciate receiving manuscripts that are easy to read and edit. Simplicity in reporting scientific results does not obscure the fundamental attributes of a publication, i.e. correctness, completeness, accessibility, but makes them easily come out.

Subjects for discussion

1. What is the purpose of writing a paper?
2. What is the IMRAD format?
3. Which are the advantages of following this format?
4. Which writing rules should be followed?

Guidelines and standards

Guidelines and standards on writing and editing scientific publications have confirmed their importance within the scientific community and their efficacy within the publication process. They address all aspects of the editorial flow, from the ethical principles related to the process of evaluating, improving, and publishing manuscripts; to the relationships between editors and authors, peer reviewers, and the media, to the more technical aspects of preparing and submitting manuscripts. This module will focus on describing the major guidelines and standards issued by international organizations. This information is targeted to authors, editors, peer reviewers, publishers, editorial staff, and any other stakeholders involved in the publication process. Together, these individuals need to cooperate in order to guarantee the integrity of science communication and the proper dissemination of scientific data, for the benefit of public health.

Editors of scientific journals should ensure the best quality of data presentation, clarity, and correctness in disseminating new knowledge. They should guarantee the integrity of author's contributions in terms of both quality of content and editing. A sound editorial policy is essential, and international guidelines and standards can be of help to editors and authors in achieving the best quality articles. Editors should guarantee the integrity of an article starting with authorship criteria that should identify who is responsible for the reliability of the paper, and moving to the more technical aspects of preparing and submitting manuscripts.

In recent years many tools have been developed to assist authors and editors: from simple style guides to the more complete guidelines issued by organizations that provide useful resources and suggestions for medical editors to improve editorial standards and promoting professionalism in medical editing regarding peer review, the level of ethical medical journalism, and the integrity of science.

Figure 40 shows the main objectives of guidelines and standards.

These guides and guidelines serve as concise reference tools for editors which can help them define their "Instructions to Authors", and can also serve as the basis for scientific writing courses to train inexperienced authors and editors. For some of these, translated versions of the official English language document have been issued for non-profit purposes.

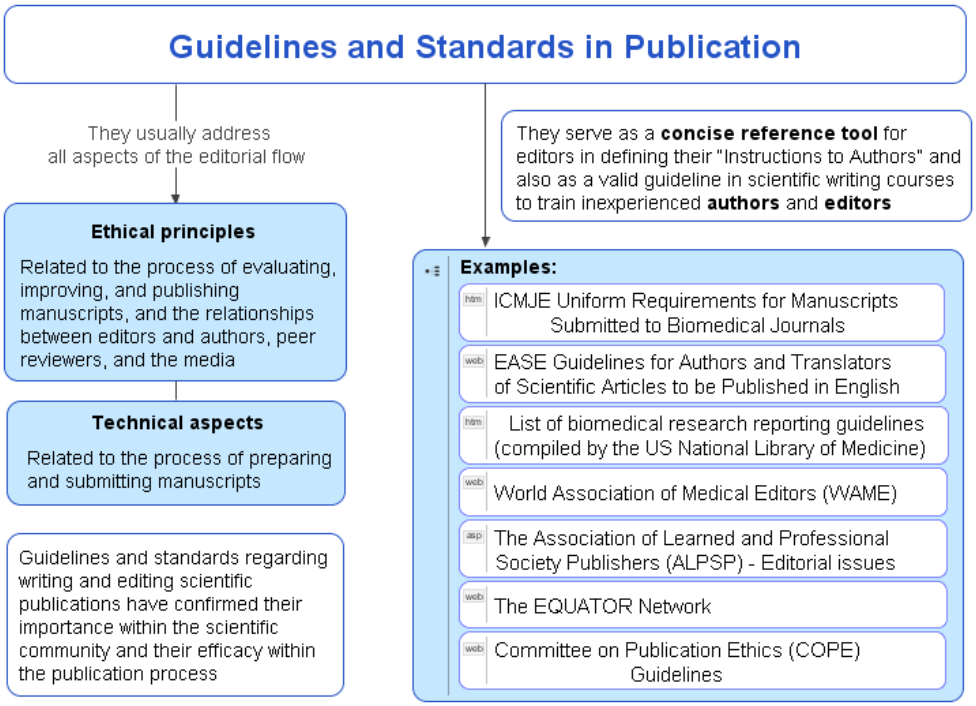


Figure 40. Scheme: guidelines and standards in scientific publications

Here follow some examples of some of these editorial guidelines:

1. The *Uniform Requirements for Manuscripts submitted to biomedical journals* (URM) created the International Committee of Medical Journal Editors (www.icmje.org) are an essential reference document, noteworthy for their completeness and thoroughness. These guidelines on writing and editing in biomedical publications help authors and editors in their mutual task of creating and distributing accurate, clear, easily accessible reports of biomedical studies. They consider all aspects of the editorial flow, in particular: ethical principles related to the process of evaluating, improving, and publishing manuscripts; relationships among editors and authors, peer reviewers, and the media; publishing and editorial issues technical aspects of preparing and submitting manuscripts.
2. The *Guidelines for authors and translators of scientific articles* by the EASE (www.ease.org.uk), includes, in various languages (20 up to date), major editorial recommendations for authors and translators of scientific articles, aiming to make

international scientific communication more efficient. They summarise up the main points of a set of major guidelines (concerning the content and style of scientific articles) into one document, available in English, Arabic, Bangla, Chinese, Estonian, French, Italian, Japanese, Korean, Persian, Polish, Portuguese, Romanian, Russian, Spanish and Turkish. The recommendations will be reviewed annually and in the future more appendices on specific subjects will be added.

3. The World Association of Medical Editors (WAME), an association of editors of peer-reviewed medical journals from countries around the world, provides useful resources and suggestions for medical editors. It aims at improving editorial standards and promoting professionalism in medical editing with regard to: peer review, the level of ethical medical journalism, and the integrity of science.
4. On the US National Library of Medicine's website, a chart lists the major biomedical research reporting guidelines that provide advice for reporting research methods and findings, the Research Reporting Guidelines and Initiatives. They are listed by organization. The chart also includes editorial style guides for writing research reports or other publications.
5. The Association of Learned and Professional Society Publishers (ALPSP) issues guidelines for good editorial practice and information on subjects such as copyright and other legal issues, agreements, licensing, marketing, production, journal publishing and more.
6. The EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network is an international initiative that provides resources (such as guidelines), education and training for the improvement of the quality of health research reporting.
7. The Physics Laboratory, one of the major operating units of the National Institute of Standards and Technology (NIST), develops new physical standards, measurement methods, and data for electronic, optical, and radiation technologies. It provides the International System of Units and provides a checklist to help authors review the conformity of their manuscripts with proper SI usage and the basic principles concerning quantities and units.

Subjects for discussion

- Which are the main guidelines for preparing and submitting manuscripts to scientific journals?
- How to choose among them according to their specific issues?
- How can they guarantee quality and integrity in publication?
- Is there any suggested way for conforming to journals' Instructions to Authors?
- How do medical journals benefit from standards and guidance?

Supporting authors

Both aspiring and experienced authors may need assistance during the preparation, submission and editing of their manuscripts and it is important that they know exactly where to search or whom to ask.

Authors can find support from many different sources, both before and after submitting the paper for publications. Support may come from colleagues, co-authors, specialists in the field of interest or from the different actors of the publication process, for instance editors, reviewers, etc. Support may also come from documents, papers, manuals and guidelines or even from the online community such as blogs wikis and other web 2.0 applications.

This module describes the main sources of support available to authors with the aim of providing a useful list of supporting materials and suggestions (Figure 41).

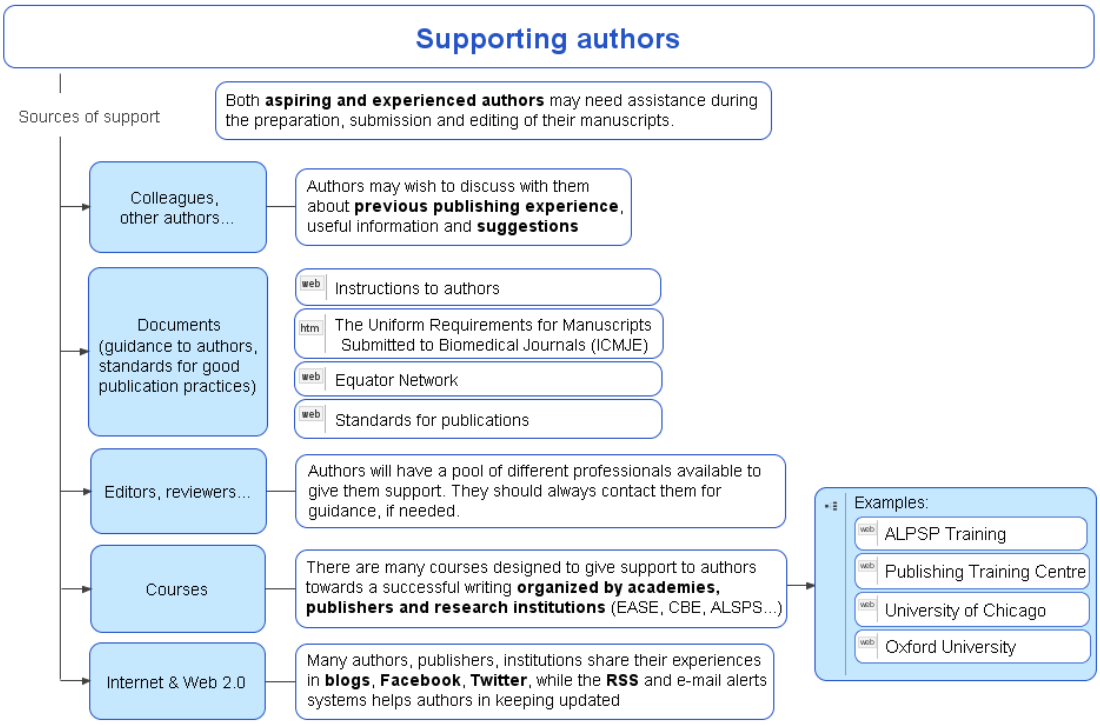


Figure 41. Scheme: supporting authors

Here follows a list of suggestions and sources useful for authors to receive support to publish their manuscripts:

1. *Colleagues, co-authors, more experienced authors, specialists in the area of reporting*
   The author may wish to ask them about their previous publishing experience such as: Where did they publish their findings? What problems did they encounter? What difficulties if any did they experience with the peer-review process?.

2. *Reference material*
   There are many documents written with the specific purpose of giving guidance to authors and setting standards for a good publication practice.
   - Instructions to Authors
     They are provided for each journal. Some of them are very detailed and can satisfy the many different questions and perplexities in writing a paper. Before sending a paper to a specific journal, authors must carefully read their 'Instructions to Authors' and diligently prepare the manuscript according to the editorial requirements. Instructions to Authors of about 6,000 journals in health science are available at the Mulford Health Science Library website.
   - The *Uniform requirements for manuscripts submitted to biomedical journals*
     Regularly updated by ICMJE, they are agreed and followed by most biomedical journals. Here authors can find not only useful information on how to write and submit their paper (from titles to illustrations), but also on how to cope with ethical issues (from plagiarism to fraud, from duplicate publications to conflicts of interest).

- Style manuals and language reference works
  They include handbooks, dictionaries, thesauri, etc. published to help authors (and editors) to understand and use the correct editorial style and codification for linguistic parameters and scientific principles. Among them the *Oxford Style Manual* and serie of *CSE Guidelines*. At local level, similar manuals are produced in native languages. The International Organization for Standardization (ISO) provides standards for publications and e-products.
  A comprehensive list of reporting guidelines listed by study type (from experimental studies, to systematic reviews and many more) is available from EQUATOR, the resource centre for good reporting of health research studies. Resources for Authors, Editors and peer-reviewers are also available in this extremely useful website which acts as a hub for different resources, documents, and other material for an accurate reporting of research studies.

3. *Professionals*
   After submitting their papers for publication, authors will have a pool of different professionals available to give them support (editors, reviewers, etc). They should not hesitate to share with them doubts, thoughts and questions. They should always contact them for guidance, if needed.

4. *Training courses*
   There are many courses designed to give support to authors towards a successful writing organized by academies, publishers and research institutions. Courses can be organised in-house (only for researchers and staff working within the same organisation) or they may be addressed at national or international level.

5. *Internet*
   The Internet is of course an important source of support to authors. Many of documents, instructions and guidelines cited here are available online. Furthermore, the applications of the Web 2.0 tools offer a unique opportunity of sharing knowledge. Many authors, publishers, institutions share their experiences in blogs, facebook, and on twitter, while the RSS feeds and e-mail alerts systems helps authors to keep updated.

Subjects for discussion

- Which are the main sources of support for authors?
- Where can you find a list of guidelines for reporting of research studies?
- Which requirements are followed by the main biomedical journals?
- Where can you find online Instructions to authors of journals in health science?

Ethics in scientific publishing

Ethical considerations can be applied to many subjects concerning human activities and to the different fields of scientific research. Ethical conduct should be strictly followed not only when carrying out a research activity, but also when disseminating its results through to publication in scientific journals. This module will focus on what can be defined as ethical conduct in scientific publishing and will discuss standards, codes, requirements, principles, and best practice guidelines which are issued by international organizations to prevent infringements and dishonest behaviour. Because recommendations to improve the ethical reporting of research apply to all stakeholders involved in the publication process, this module will address issues that

not only apply to authors, but also to editors, peer-reviewers, publishers, and editorial staff. All these players need to cooperate in order to guarantee the integrity of science communication and the correct dissemination of scientific data in society, for the benefit of public health.

There is now general agreement on the importance of promoting responsible research and publishing reliable data. Publication of false results could in fact have a direct negative impact on the health of the general population, and that is why the moral implications of misconduct in this field, in particular, is of utmost importance. However errors can be made both inadvertently and deliberately, and recognising, managing, and monitoring scientific misconduct is a difficult task for science editors.

Figure 42 shows different aspects associated to ethics in scientific publications.

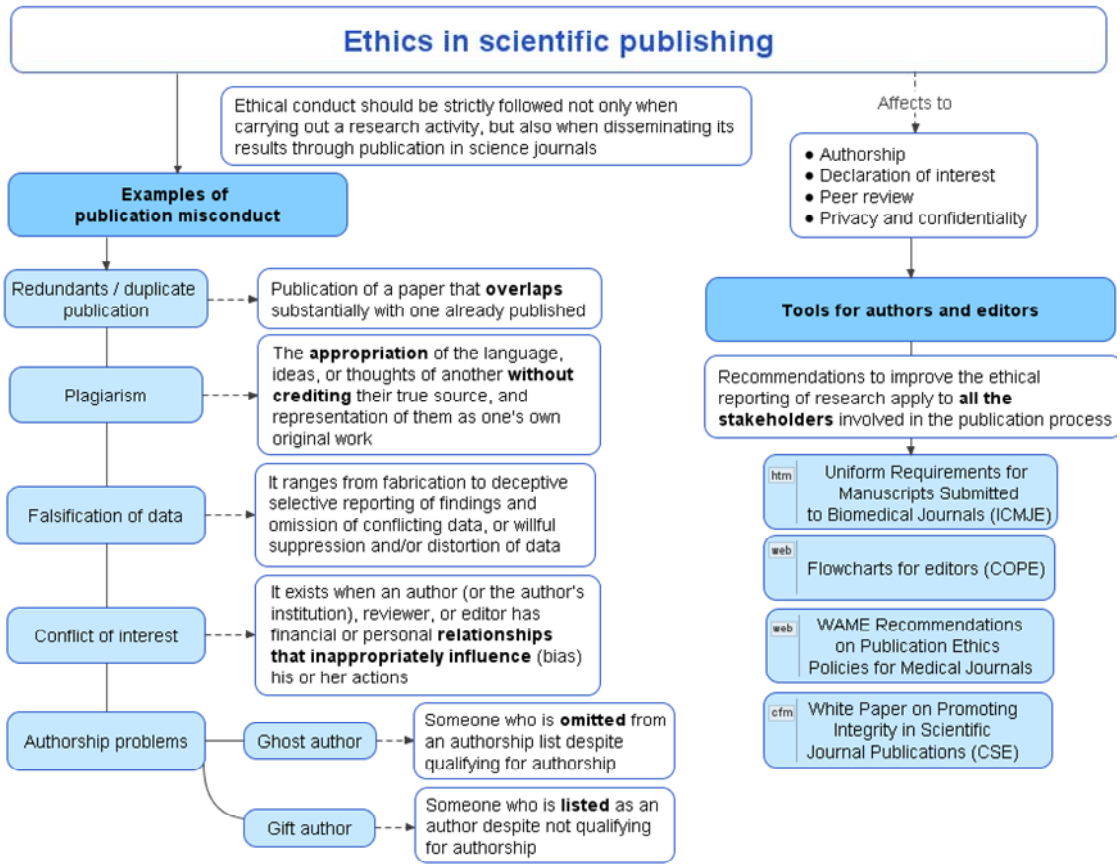


Figure 42. Scheme: ethics in scientific publication

To correct this misconduct some sort of sanction or penalty is necessary, and this is an even more challenging task. The following documents and professional associations should be used both to encourage authors to follow ethical behaviour and to help journal editors recognise possible infringements:

1. The URM under the following sections:
   - Authorship and contributorship;
   - Peer review;

- Conflicts of interest;
- Privacy and confidentiality;
- Protection of human subjects and animals in research.

The URM also contain specific sections relating ethics:

- Obligation to publish negative studies
- Corrections, retractions, and "expressions of concern"
- Overlapping publications.

2. Committee on Publication Ethics (COPE) flowcharts
   The 17 schemes provide a useful tool for editors who suspect publication misconduct (redundant publication; plagiarism; fabricated data; changes in authorship and suspected guest, ghost, gift authorship; undisclosed conflict of interest; reviewer misconducts; etc).

3. WAME Recommendations on publication ethics policies for medical journals
   They include an interesting list of web resources on ethical matters for editors, individually reviewed and briefly summarized by the Committee.

4. White Paper on Promoting Integrity in Scientific Journal Publications
   Issued by the Council of Science Editors (CSE), a community of editorial professionals dedicated to responsible and effective communication of science, it implements high-quality editorial standards and provides educational and career development opportunities. Moreover, it analyses issues in ethical publishing practice with the aim to inform and guide towards good publication practice.

5. Office of Research Integrity (ORI)
   It is a US Government office promoting integrity and responsible conduct of research. It provides policies, procedures and practical tools for handling and evaluating misconduct.

Along with the resources just described, the following source should also be mentioned: EASE); the STROBE Statement on the reporting of observational studies in epidemiology; the CONSORT Statement on the reporting of clinical trials.

Subjects for discussion

- What can be defined as unethical behaviour in scientific publishing?
- List possible cases of misconduct.
- What are the main documents that may help editors dealing with misconduct behaviour in scientific publishing?
- Are there specific associations that aim to improve responsible and effective communication in science?

Authors' rights

An author's work is associated with two types of rights: moral rights and the rights of exploitation or copyright. Such rights are generally referred to Intellectual Property Rights (IPR). Moral rights are not transferable and do not expire. The rights of exploitation include the rights of distribution, reproduction, public communication, and derivative works. These are transferable with or without trade-offs. The transfer of the rights of exploitation, or economic rights, to third parties can take two forms: Assignment/Transfer and License. An assignment is a transfer of ownership of these rights, and a license grants the right to use or exploit the object protected by intellectual or industrial property, with certain conditions or considerations.

Figure 43 shows a scheme of the authors' rights.

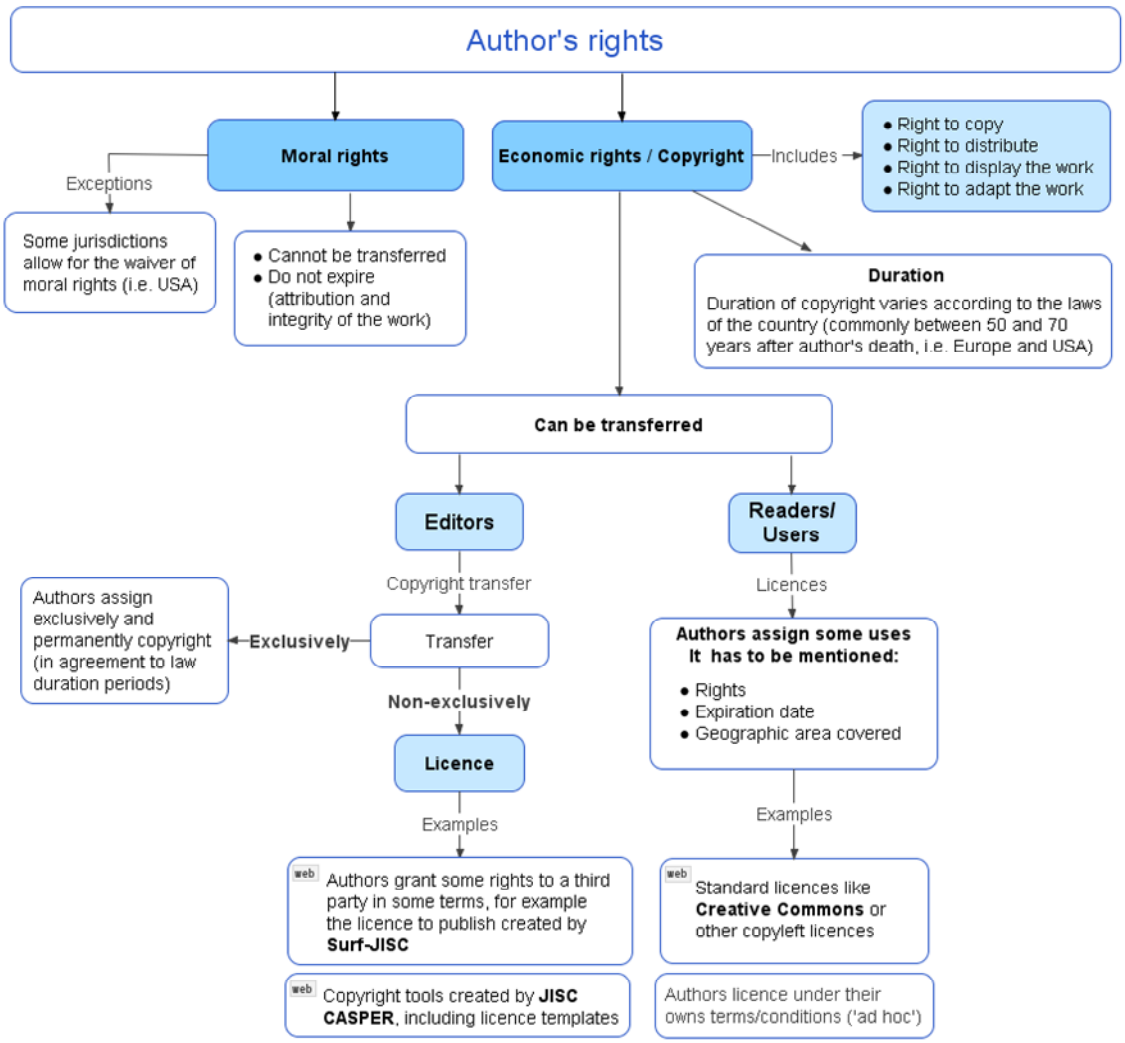


Figure 43. Scheme: authors' rights

Copyright assignment may be exclusive or non-exclusive. It is exclusive if the author assigns indefinitely (with the limitations made by law) the rights of exploitation and the holder thereafter regulates reuse of the work. In the case of non-exclusive copyright the author and the other party sign a set of terms in which some rights are reserved for the author and others to the other party.

With scientific publication, the most commonly followed model is the exclusive transfer of copyright of an article to the publisher, who also acts on behalf of the author in case of fraud. In the 'Gutenberg time' this model was the only one. However, in the 'digital age' things have changed. Fraud (copying, plagiarism, etc.) can now be more easily committed and detected, and so alternate models such as OA have come about. On the other hand, when access barriers are removed, the visibility of work on the Internet increases. This affects both the individual article and the journal impact.

To promote OA to the scientific production, it is important to identify the copyright owner and on what terms they authorize the reuse of the work. According to the OA Berlin Declaration, October 2003, one of the conditions that must be met in order to encourage OA is that author retains some rights, and grants other rights to users:

> The author (or authors) and those who hold the contributions rights should grant to the users free access right to the work as well as license to copy, use, distribute, transmit, and display the work publicly. They have the right to produce and distribute derived works in any digital medium for any purpose, and also the right to make copies printed in small quantities for personal use.

Publishers have realized that they cannot ignore the OA movement. Some have adapted their copyright assignment agreements and licenses to be more permissive. These adapted agreements allow authors to self-deposit their paper in institutional repository or personal web page. Another issue has to do with what version can be self-archived and if the deposit can be made at the time of acceptance of publication or after a delay. An example of this type of license was created by the Surf Foundation and JISC (Joint Information Systems Committee) as a model for journals to use. It is translated into several languages including Spanish.

Addenda can also be used to modify the copyright agreement. An author addendum is a proposed modification to a publisher's standard copyright transfer agreement. If accepted, it would allow the author to retain key rights, especially the right to authorize OA. The purpose is to help authors who are uncomfortable negotiating contract terms with publishers or who are unfamiliar with copyright law and don't know the best terms for a modification to support OA. Because an addendum is merely a proposed contract modification, a publisher may accept or reject it. There is a list of author addenda in the Open Access Directory (OAD) that can help to draft your own (http://oad.simmons.edu/oadwiki/Author_addenda).

Copyleft licenses aim to ensure that every person who receives a copy of a work may in turn use, modify, and redistribute that work and derived versions. They are becoming more and more widespread, both in the world of computer programming, and also for creative works. Sometimes they allow commercial use of the work and sometimes they do not, depending on the author's rights.

Creative Commons licenses are among those created with these objectives, and they are beginning to have widespread use in the digital world. The licenses are made by the combination of 4 conditions: Attribution, Share Alike, Non-Commercial and No Derivatives. These conditions give rise to six licenses:

- Attribution;
- Attribution-ShareAlike;
- Attribution-NoDerivs;
- Attribution-NonCommercial;
- Attribution-NonCommercial-ShareAlike;
- Attribution-NonCommercial-NoDerivs.

Each type of license is associated to a graphical symbol.

The CreativeCommons initiative provides, on its website, a tool in which you can select a license and then generate the html code that can be embedded on a webpage or in a web tool.

Finally, it is worth clarifying the meaning of "orphan works" and "public domain". Orphan works are those in which the identification or location of the author or rights holder is not known. Orphan works therefore are not actually free of copyright. In opposition, public domain works are those for which copyright has been held for the period stipulated in legislation (e.g. in Europe 70 years after the author's death) and subsequently has expired. In these instances you do not need permission to use the works, if the author's moral rights have been provided for.

Subjects for discussion

- What are the author's rights over their works?
- How an exclusive copyright transfer could affect the reuse of papers published in a journal?
- What are the Creative Commons licences?
- How should be a licence to publish be worded to allow self-archiving of papers in an institutional or subject repository, and/or personal web pages?

M4. Peer review and quality indicators

Types of peer review

Validation of scholarly work through peer review improves the quality of the manuscript and enhances the scholarly community. The peer review process is undertaken as part of the process of submitting an article for publication in a scholarly journal, or other scholarly publishing output such as monographs. When a journal receives a manuscript, the editorial board must decide if it fits the quality standards and the scope of their publication. Editorial boards may undertake the peer review themselves or seek opinions from a wider range of experts. These experts, then, review the manuscript and make a recommendation to accept, reject, or suggest modifications and invite the author to resubmit. The peer review process can vary depending on the context of the publication or scientific discipline. One of the most important aspects of the process however is the quality of the referees who should provide constructive criticism about the manuscript rather than merely accepting or rejecting it. Therefore, finding good reviewers is a critical issue. Figure 44 shows the main types of peer review.

According to *Peer review: a guide for researchers*, published by the Research Information Network (RIN), peer review is defined as follows:

> Peer review is both a set of mechanisms and a principle at the heart of the system for evaluating and assuring the quality of research before and after it is funded or published. It involves subjecting research proposals and draft presentations, papers and other publications to critical evaluation by independent experts (peers). The reviewers are usually appointed by the funding body or the editors of a journal or other formal channel for communication to which the work has been submitted.
> The origins of peer review are often traced to the scholarly societies of 18th century Britain; but it became an institutionalised part of the scholarly process across all subject domains only in the latter half of the 20th century, in response to the growth of scholarly research and greater subject specialisation. It is not a single process, but rather a flexible set of mechanisms used by funding agencies, scholarly journals and employers across the world as the key means to ensure that only high-quality research is funded, published and appropriately rewarded.

There are three basic types of the peer review:

- *Open*
  the reviewer and author are known to each other.
- *Blind*
  the reviewer's identity is not known to the author.
- *Double-blind*
  both reviewer and author remain anonymous.

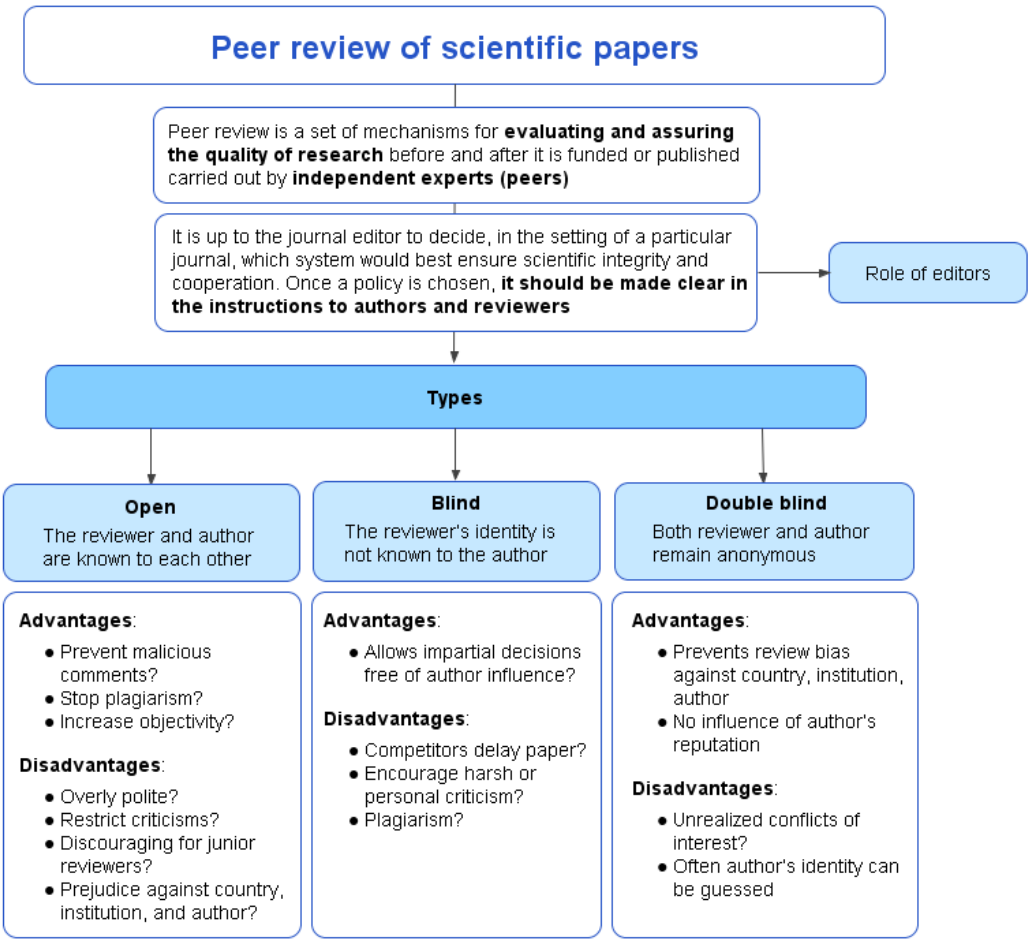


Figure 44. Scheme: peer review

It is up to the journal editor to decide, in the setting of a particular journal, which system would best ensure scientific integrity and cooperation. Once a policy is chosen, it should be made clear in the instructions to authors and reviewers.

Several journals are experimenting with different types of review, such as publishing the reviewers' comments with the manuscript. Some of the experiments are provided by the Association of Learned and Professional Society Publishers (ALPSP) web page on "Editorial issues".

The main advantages and disadvantages of each type of peer-review are summarized in Table 6.

Within the peer review opportunities and strategies, it is also worth mentioning the so called Cascading Peer-Review, a solution adopted by many publishers as a way to reduce costs and improve efficiency. According to this strategy, a manuscript – which should be rejected by a journal because it is not appropriate within their field – is re-directed to another more appropriate journal. This saves time and costs for a second or third review and helps the submitting author to easily find a way to publish his paper.

Table 6. Main advantages and disadvantages of different types of peer review

Type of peer review	Advantages	Disadvantages
Open	Prevent malicious comments Stop plagiarism Increase objectivity	Overly polite Restrict criticisms Discouraging for junior reviewers Prejudice against country, institution, and author
Blind	Allows impartial decisions free of author influence	Competitors delay paper Encourage harsh or personal criticism Plagiarism
Double-blind	Prevents review bias – against country, institution, author No influence of author's reputation	Unrealized conflicts of interest Often author's identity can be guessed

Peer review is definitely an important step in journal publishing, but despite great efforts provided by referees in reviewing manuscripts to improve their quality, it is widely recognized that the quality of most of the published papers is poor. In this regard, Evidence-Based Medicine may represent an added value to appraise articles, and reject most of them when writing a systematic review. A final consideration regards rejection rates of articles including qualitative versus quantitative methods of research: qualitative research tends to be rejected from STM (Scientific, Technical and Medical) journals, and it is quite sad because qualitative research brings new ideas, and often methodology is as good as in quantitative research.

Subjects for discussion

- Why is the peer review process crucial for the quality of a journal?
- What types of peer review exist according to the anonymity of authors/reviewers? What advantages or disadvantages could bring those types?

Ethics in peer review

One of the key aims of peer review – working alongside ethics and research codes – is to filter out bad research. This includes fabrication, falsification, plagiarism, failure to disclose conflict of interests, and other forms of scientific misconduct. Despites these safeguards instances of malpractice and misconduct do persist, and since reviewers themselves are fallible, peer review cannot provide a failsafe guarantee against the publication of bad research. As a result a number of published papers are retracted each year for a variety of reasons; and there is evidence that such number is rising. Editors, publishers and others have established mechanisms and procedures for dealing with cases where suspicions or reservations are raised about individual pieces of published work, and whether they should retain their place in the records of science. All major publishers and professional associations – such as the COPE and the EASE – have established procedures for handling such cases. They provide training and guidance on good practice, as well as a forum and other mechanisms to discuss specific instances and issues, provide advice, and deal with disputes. Figure 45 shows relevant issues associated with ethics in peer review.

Editors and reviewers alike must declare any possible conflict of interest regarding the contents or authorship of submitted articles.

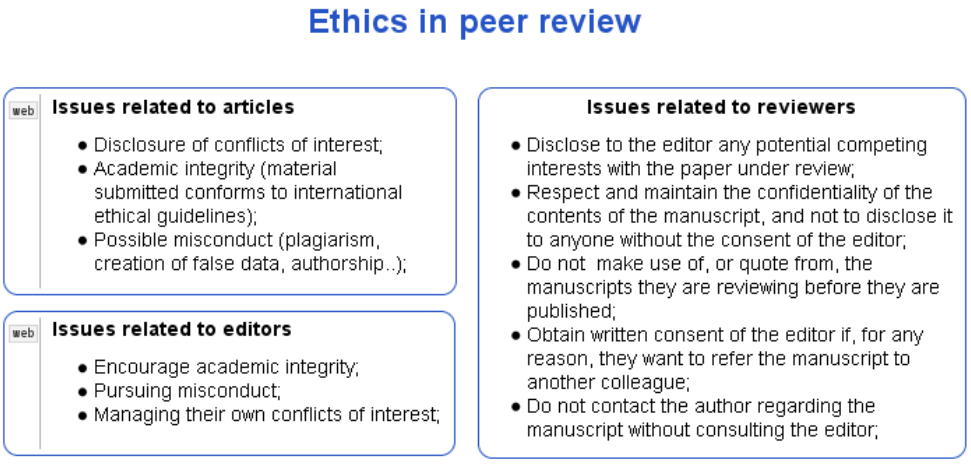


Figure 45. Scheme: ethics in peer review

The confidentiality regarding the article should also be safeguarded by both reviewers and editors; its contents should not be disclosed outside of the editorial environment; comments or personal use of the work submitted for evaluation are also not permitted.

The journal editor has primary responsibility to identify any ethical issues. These cases are difficult to detect unless you are very familiar with the field of research in question, or work with other reviewers from within the field who can help to identify any issues that have passed the screening of the editorial team. In both cases, the editor should contact the authors to inform them of any issues discovered and then take an appropriate decision. In case of error, the editor should take final responsibility and remedy the damage caused. Figure 46 shows different steps of the review process.

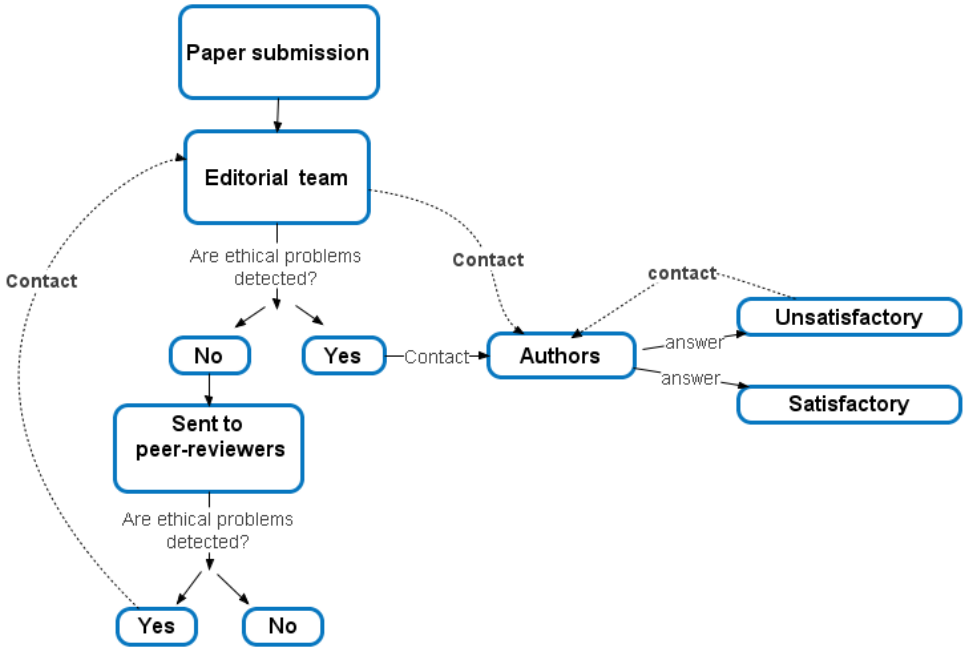


Figure 46. Scheme: different steps in the peer review process

When the suspicion of malpractices (such as plagiarism, authorship, falsifying results, etc.) arises depending on its severity of the case, different courses of action may be taken:
- ask the authors to confirm the data;
- ask the authors to rewrite the work;
- refuse work;
- contact the institution where the authors work;
- remove the work;
- write a note denouncing the author.

These are the main issues that editors should consider when they suspect publication misconduct according to the flowcharts created by COPE:

- *What to do if you suspect redundant (duplicate) publication*
  (a) Suspected redundant publication in a submitted manuscript
  (b) Suspected redundant publication in a published article
- *What to do if you suspect plagiarism*
  (a) Suspected plagiarism in a submitted manuscript
  (b) Suspected plagiarism in a published article
- *What to do if you suspect fabricated data*
  (a) Suspected fabricated data in a submitted manuscript
  (b) Suspected fabricated data in a published article
- *Changes in authorship*
  (a) Corresponding author requests addition of extra author before publication
  (b) Corresponding author requests removal of author before publication
  (c) Request for addition of extra author after publication
  (d) Request for removal of author after publication
  (e) Suspected guest, ghost or gift authorship
  (f) Advice on how to spot authorship problems

Other questions regard:
- what to do if a reviewer suspects undisclosed conflict of interest in a submitted manuscript;
- what to do if a reader suspects undisclosed conflict of interest in a published article;
- what to do if you suspect an ethical problem with a submitted manuscript;
- what to do if you suspect a reviewer has appropriated an author's idea or data;
- how COPE handles complaints against editors.

The COPE website includes all relevant issues.

Subjects for discussion
- What is the role of scientific journals?
- If an editor detects a case of misconduct in a submitted paper, how should he/she proceed?
- What are the roles of reviewers in safekeeping the integrity of reviewed papers?

Roles in the peer review process

One of the pillars of the academic journals is the peer review process, established for more than 300 years, which is becoming more important due to the increased methodological complexity of scientific papers, especially in clinical research. Together with the editorial board,

the team of reviewers constitutes the most critical asset of a journal, which makes it a qualified journal – or not. The journal is supposed to properly orient his reviewers, especially when it comes to identifying conflicts of interest or detecting the occurrence of plagiarism or forged results. The peer reviewer and the editorial board (or the editor himself, see *Editors and editorial staff*, p. 64) share the responsibility of ensuring the quality and suitability of a scientific journal, which is later translated into prestige.

Reviewers are advisers to authors and editors on the quality of the manuscript. They are external experts chosen by editors to provide written opinions that allow the editor to decide whether to publish the submitted article, and provide authors with feedback that will help them to improve the manuscript.

The role of the peer reviewers is to examine and assess the submitted paper for such matters as research design and methodology, as well as validity, accuracy, originality and significance of findings. After this accurate analysis, they make a recommendation to accept, reject, or ask the authors to make modifications and resubmit. Figure 47 shows the role of reviewers and associated activities.

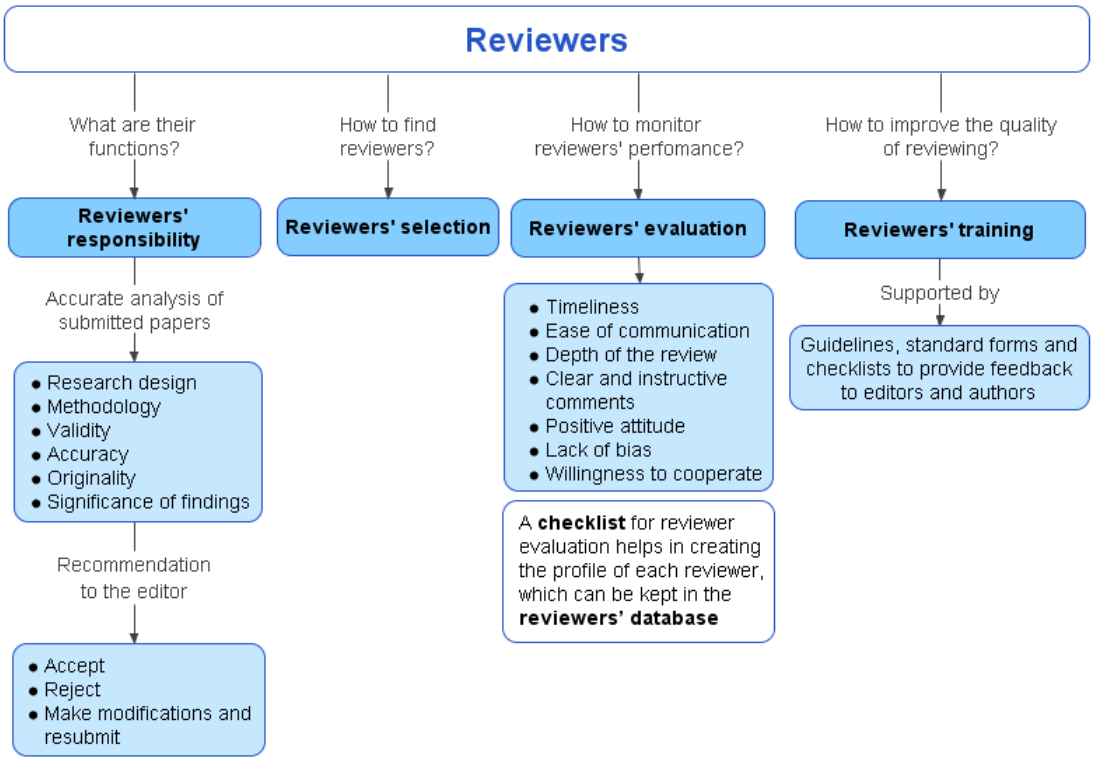


Figure 47. Scheme: roles of reviewers and associated activities

The quality of referees is important in order to contribute to the quality of the potential published paper; they are expected to make constructive comments and not simply reject a manuscript without further explanations. The quality of the peer review process helps to maintain the reputation and quality of a journal. Finding quality reviewers is a critical issue. Some journals use professionals from their own editorial board while others ask authors to

indicate specialists within their subject area. A literature search from databases may also reveal potential reviewers from all over the world.

Journals are expected to properly guide their reviewers – as well as the authors through detailed instructions – covering topics such as originality; compliance to the journal's scope; ethical issues, technical expertise; timescale of the review process; conflict of interest, confidentiality etc. One of the most critical issues in evaluating a paper is the potential conflict of interest of the reviewer toward the submitted work. Reviewers must be advised to inform the editor if any conflict of interest is detected and decline to perform an evaluation.

In summary, the binomial editor-peer reviewer is mostly responsible for the quality of a scientific journal. Quality translates into prestige and consequently more impact. However, it is not always a reversible path. EQUATOR, COPE, ICMJE, WAME and EASE provide recommendations for peer review.

Monitoring reviewers' performance

It is recommended that journals monitor the performance of their reviewers periodically. Some journals apply a rating system to maintain an up-to-date list of those reviewers who are most thorough and reliable.

A checklist for reviewer evaluation will help in choosing more effective and helpful reviewers in the future. Results of this checklist can be kept in the reviewers' database as the profile of each reviewer.

Examples of items that can be included in reviewers' evaluation are:

- timeliness;
- ease of communication;
- depth of the review;
- clear and instructive comments;
- positive attitude;
- lack of bias;
- willingness to cooperate.

A useful reviewer evaluation form can also be found in *FAME Editorial guidelines* published by the WHO on behalf of FAME (Forum for African Medical Editors).

Training reviewers

Training of reviewers (if possible) may help not only to increase the quality of the reviewing but also to improve the submitted papers. Editors will not usually have the resources to run training programmes for their reviewers alone, but may be able to undertake such activities jointly in association with other editors or organizations.

Selecting reviewers

It is useful to establish written criteria for the selection of reviewers, and it is worth keeping in mind that younger researchers, although less well qualified or experienced, often produce the best reviews.

Supporting reviewers

As with authors, it is important that journals support their reviewers. The importance of providing them with clear guidelines has already been highlighted. Journals may also consider

including standard forms and checklists to make it easier for reviewers to provide useful feedback to editors and authors.

Suggestions for journal editors

A list of useful suggestions for journal editors is report below:

- avoid overworking busy reviewers, for example, sending them manuscripts too frequently;
- supply reviewers with the journal clear guidelines and expectations for reviewing manuscripts;
- request reviewers to be critical but constructive and courteous;
- reward reviewers with incentives such as free subscriptions, free copies, and recognition of their contribution;
- ask reviewers to disclose to the editor any potential conflicts of interests with the paper under review;
- ask reviewers to respect and maintain the confidentiality of the contents of the manuscript, and not to disclose it to anyone without the consent of the editor;
- ask reviewers not to make use of, or quote from, the manuscripts they are reviewing before they are published;
- ask reviewers to obtain written consent of the editor if, for any reason, they want to refer the manuscript to another colleague;
- ask reviewers not to contact the author regarding the manuscript without consulting the editor;
- send manuscripts to at least one foreign or external reviewer when working for a journal that serves a small scientific community, in order to avoid conflicts of interest influencing the review process.

Quality of journals

Indexing in national, regional and international databases constitutes one of the methods to appraise scientific journals. It promotes greater visibility and selects journals based on different quality criteria. However, evaluation, selection and inclusion in those databases cannot be considered the only quality indicator of a journal. The most well-known science databases, such as Web of Science and SciELO, have different selection and permanence criteria that meet the objectives and target audience of the journals included in the database.

The evaluation of scientific journals primarily emerged from a need within university libraries to select which journals to subscribe to, to fulfil the needs of their academic community with limited budgets and concurrent increasing subscription costs. Later, the assessment of journals and of the research published in them became imperative for various professional societies, individual scientists, scholarly institutions and funding organizations to evaluate what is relevant to be translated into public policies. The quality of a scientific contribution is primarily estimated from the long-term impact that it has in science. The latter can be inferred from the citations in scientific articles that a contribution receives. These principles have been applied in the evaluation of scientific journals. Indicators of scientific impact constitute one means to appraise scientific journals. Others include indexing in national, regional and international databases.

The increasing availability of scientific journals in the electronic mode has allowed recording journals' access and download rates, which makes it possible for the alternative ranking methods to identify, for instance, how influential a journal is based on whether it is being cited by other influential journals or not. The appraisal process is long and relies on limited database editorial board experts, and the lack of indexing of a journal in prestigious

databases does not mean that it is of lower quality. A high quality scientific journal will be recognized as such even if it is young, despite it may take time for that recognition to come. Figure 48 shows a scheme of how quality of journals can be assessed.

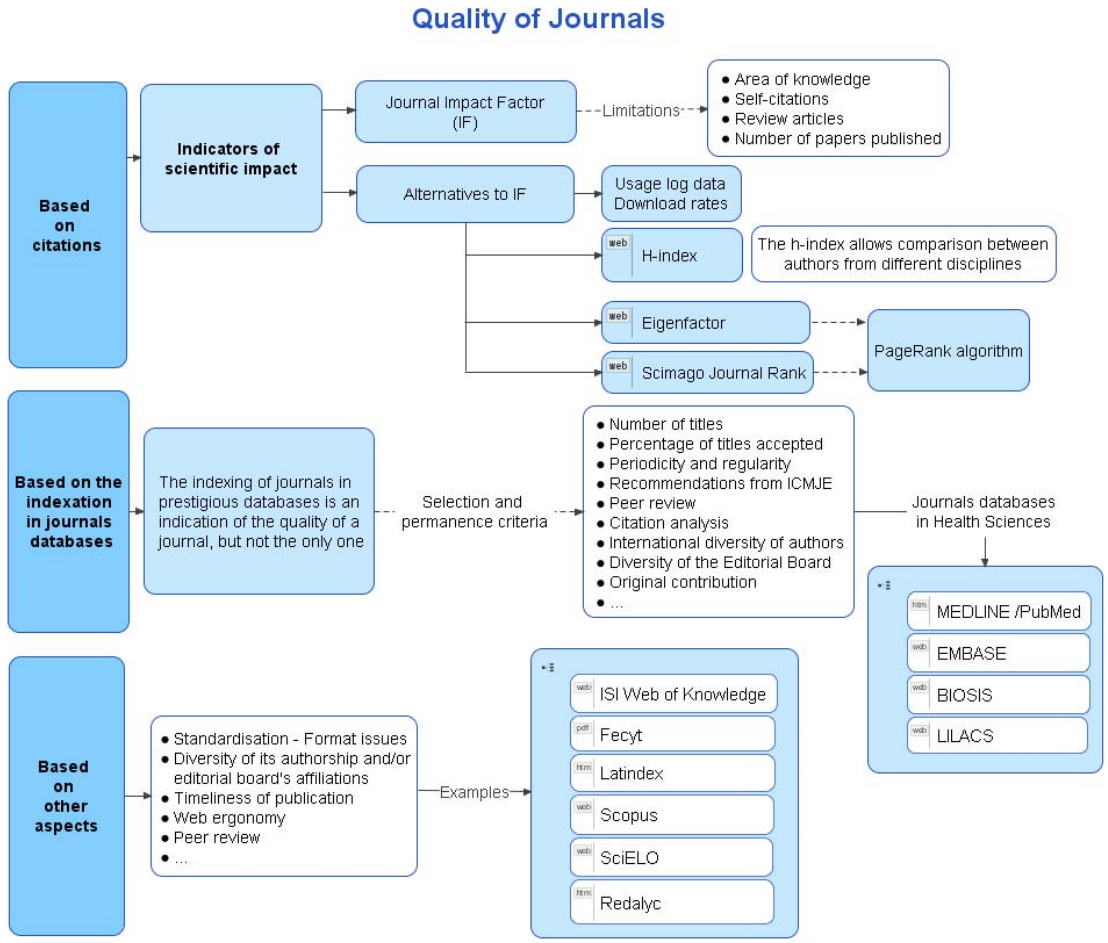


Figure 48. Scheme: quality of journals

Publication metrics

The most well-known measurements of journal impact is the Impact Factor (IF), but there are alternative indexes developed more recently to cope with IF biases. Figure 49 includes different metrics used to evaluate scientific journals.

Impact factor

The journal IF, created in 1975 by Eugene Garfield, the founder of the Institute for Scientific Information (ISI), today Thomson Reuters, has been extensively used in the past decades as an index of prestige and notoriety of scientific journals.

It is based on citation analysis, using the Web of Science database, which has over 11 thousand journals.

IF is the ratio of citations received by papers (in a specific journal) published in the two years prior to the calculation to the number of articles (in the same journal) published in those two years. The question is whether this index reflects the quality of the journal.

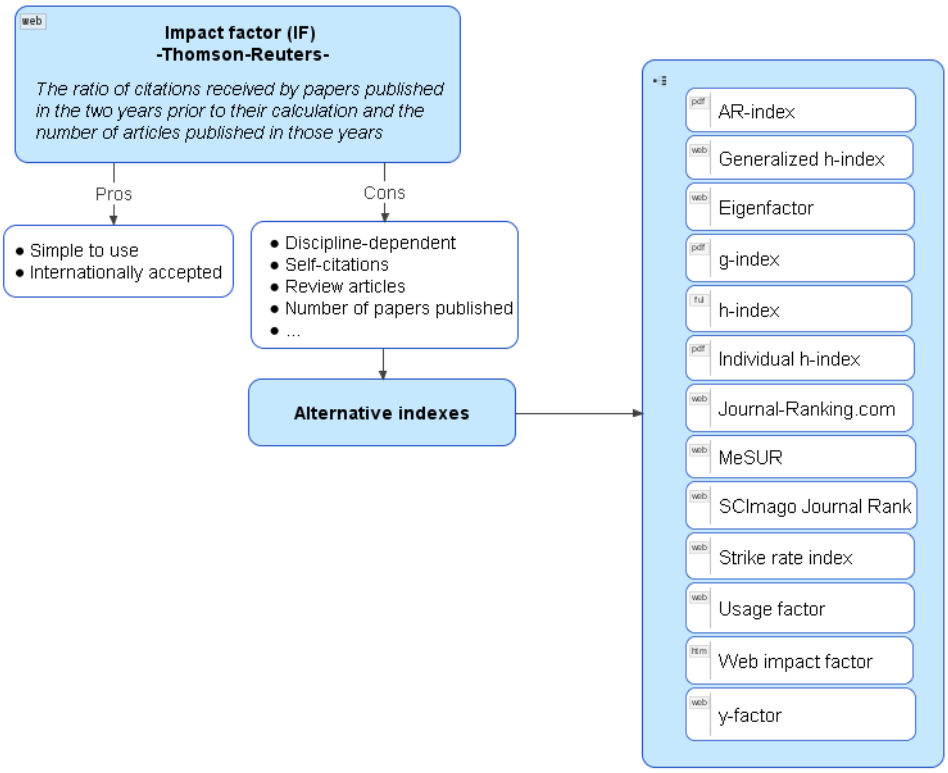


Figure 49. Scheme: metrics

The answer is certainly not, however it is still used because it is easier to use a simple and internationally accepted tool than to question its validity. There are arguments that put into question whether this index reflects the true impact of a work. The first is that the impact factor is directly related to the scope of the journal. Moreover, there is also evidence that the contribution to the count of citations comes from a very low percentage of the total number of published articles. There are also ways of increasing the impact factor of a journal, such as asking publishing authors to cite papers already published in the journal, or publishing review papers in the first issues of the year to be cited later. In summary, IF should be taken as a measure of impact but not as the only one, despite the fact that many budgets and granted research projects are based on this index. It seems there is no unique solution, however alternative metrics have appeared in recent years, based not only on citations but on other uses of a paper after its publication (downloads, readings, links, etc.).

The major problems associated with the use of journal IF are listed below:

- IF is not statistically representative of individual journal articles;
- IF correlates poorly with actual citations of individual articles;
- authors use many criteria other than impact when submitting to journals;
- citations to “non-citable” items are erroneously included in the database;
- self citations bias IF evaluation;
- review articles are heavily cited and inflate IF;

- long articles collect many citations and give high IF;
- short publication lag allows many short term journal self citations and gives a high IF;
- citations in the national language of the journal are preferred by the journal's authors;
- authors prefer to cite articles published in the same journal (selective journal self citation);
- coverage of the database is not complete;
- books are not included in the database as a source for citations;
- IF databases have an English language bias;
- IF databases are dominated by American publications;
- journal set in database may vary from year to year;
- IF is a function of the number of references per article in the research field;
- research fields with literature that rapidly becomes obsolete are favoured;
- IF depends on dynamics (expansion or contraction) of the research field (small research fields tend to lack journals with high impact);
- relations among fields (i.e. clinical *vs* basic research) strongly determine IF.

It is well known today that the IF has some significant shortcomings, and that these shortcomings have different consequences depending on the use that is made of the IF rating. When used as first intended by Garfield, for selecting journals for a library, the weaknesses in this system are acceptable. However, when used to influence policy making at a national level or to evaluate a researchers' performance, it becomes important to normalize the data by area of knowledge to obtain a more accurate picture.

Many different approaches in the evaluation of the quality of scientific journals have been proposed during last years. Common to most of these approaches is a basis on citations received by papers in journals, or ultimately by journals. More recently, with the predominance of e-journals, other parameters such as usage or log data or download rates have been accepted as indicators of scientific impact of scientific journals.

Other indexes

The increasing availability of electronic scientific journals especially those that are OA, has facilitated the recording of journal access data and download rates. Thus it was easier to develop alternatives to the well established IF.

The PageRank algorithm, used in the evaluation of webpages by the popular Google search engine, has been proposed as an appropriate model for the evaluation of the quality of citations in scientific journals.

The main alternatives indexes are:

- *Scimago Journal Rank* (SJR)
  Established in 2007, it applies the PageRank algorithm on the Scopus database. Each citation received is given a weight, according to the prestige of the citing journal. Besides having the advantage of being available in OA, SJR is based on a larger database (over 18 thousand journals) than IF and self citations are automatically withdrawn from the calculations. SJR also adopts a three year window, attempting to take into consideration the different citation half lives of the various knowledge fields, allowing, thus, comparison of different disciplines. It is a strong competitor for the Thomson Reuters IF.
- *Eigenfactor*
  Developed at the University of Washington, it applies the PageRank algorithm on the Web of Science database. It appraises citations received by journals considering the quality of the citing publications on order to identify the most "influential journals", where a journal is considered to be influential if it is cited often by other influential journals. From the German, "Eigen", meaning unique, this term refers to the fact that a

single citation from a high-quality journal may be more valuable than multiple citations from peripheral publications. The Eigenfactor score of a journal is an estimate of the percentage of time that library users spend with that journal. The Eigenfactor corresponds to a simple model of research in which readers follow chains of citations as they move from journal to journal. The amount of time that the researcher spends with each journal gives us a measure of that journal's importance within network of academic citations. The Eigenfactor index has been published since 2008, also in the Journal Citation Report database from Thomson Reuters, together with the traditional IF and the Article Influence index, which is the ratio between the Eigenfactor and the fraction of articles published by the journals. Both the SJR and Eigenfactor are not absolute figures, unlike IF, and are to be considered for comparative purposes. The Eigenfactor differs from the SJR by being calculated in a 5-year window and being normalized in such a way that the sum of the Eigenfactors of all journals in the JCR database equals to 100. Eigenfactor and Article Influence indexes are openly available on Eigenfactor.org website.

- *H-index*
  In 2005, the physicist J.E. Hirsch idealized a simple and efficient way to compare the scientific outcome of researchers for career evaluation and grant applying purposes. The H-index, defined as the number of papers with citation number ≥h, it is a useful index to characterize the scientific output of a researcher, department or institution. It normalizes different scientific fields, allowing comparison between authors from different disciplines. The H-index can be also used to appraise scientific journals; in fact, the SJR includes it on its database in order to provide a comparison between different indexes.

Many other alternative indexes were also developed, such as age-weighted citation rate, g-index, generalized h-index, Individual h-index, journal influence index and the paper influence index, MeSUR (MEtrics from Scholarly Usage of Resources), strike rate index, usage factor, web impact factor, y-factor, etc.

In conclusion, scientific impact should be considered as a multidimensional concept that cannot be adequately measured by any isolated indicator. IF should be positioned in the periphery of this multidimensional construction and not in the centre, as it currently is. IF should therefore be used with caution. Usage log data can represent a better alternative to measure scientific impact than IF or SJR.

Journals databases

The indexing of journals in national, regional and international databases promotes the greater visibility, dissemination and bibliographic control of the scientific production by guaranteeing register, access and preservation of the publications. Journal databases do not need, however, to include all journals of a certain discipline to be representative. In fact, the Bradford's Law accounts that 80% of the most cited articles are published by the core 20% of journals.

The main function of journal databases is to include journals based on the quality of the articles published, and therefore, they have defined selection and permanence criteria, which vary from one database to the other in order of priority, but are essentially the same, although the databases have different objectives, target audience and thematic fields.

The most well known databases including health sciences journals are:

- *Referential databases*
  - MEDLINE/PubMed (from the US National Library of Medicine);
  - EMBASE (life sciences database from the scientific journal publisher Elsevier)
  - BIOSIS (biology science database from Thomson scientific);

  - LILACS (Latin American and the Caribbean literature on health sciences).

- *Full text databases*
  - SciELO (Scientific Electronic Library Online);
  - PubMED Central (biomedical and life sciences journals).

- *Citation databases*
  - Journal Citation Reports (from Thomson Reuters);
  - Science and Social Science Citation Indexes (from Thomson Reuters);
  - Scopus (from the publisher Elsevier).

The indexing of journals in databases follows certain criteria that meet the objectives of target audience for the journals. Sometimes, geographical, political, commercial and discipline criteria determine the indexing of certain journals, however, quality criteria are still a primary concern – e.g. the indexing of 700 new journals in the Web of Knowledge (WoK), 80 of them from LAC. The indexing of journals in prestigious databases is an indication of the quality of a journal, but not the only one.

Complying with international guidance and standards, such as those from the ICMJE and the mentioning of such guidance in the instructions to authors, is of great importance in order to standardize the quality of health science publications

An important recommendation to medical journals is the registration of clinical trials. This has been included in the recommendations of the ICMJE since 2005, and has also been adopted since 2007 by LILACS and SciELO journals.

Annex 1 summarizes the selection criteria of some relevant databases.

ANNEX

Comparison of the main criteria of indexing adopted by relevant databases

Criterium	Scopus	ISI-WoK	FECYT	Latindex	RedALyC	SciELO	LILACS	MEDLINE
Scope and coverage								
Journal definition (concept, goals, etc.)	✓			✓	✓			
Minimum age required	✓	✓		✓	✓	✓	✓	✓
Content types				✓		✓	✓	✓
Inclusion in international databases and rankings			✓	✓	✓	✓		
Percentage of copies sold			✓					
Number of papers published annually					✓	✓		
Number of papers submitted annually			✓					
Journal acceptance rate			✓					
Open Access							✓	
Quality of the content								
Originality and quality of scientific content and contribution to the subject area	✓	✓	✓	✓	✓	✓	✓	✓
Objectivity of published work							✓	✓
Quality of abstracts	✓	✓						
Citation analysis								
Citations received per journal and impact factor	✓	✓				✓		
Citations received per contributing author		✓						
Citations received per publisher	✓						✓	
Self-citation		✓						
Management and editorial policy								
Prestige of the publisher or sponsor	✓		✓					✓
Prestige and expertise of the editorial board	✓					✓	✓	✓
Geographical and institutional diversity of the editorial board	✓	✓	✓	✓		✓	✓	✓
Geographical and institutional diversity of the contributing authors	✓	✓	✓	✓		✓	✓	
Timeliness of publication	✓	✓	✓	✓	✓	✓	✓	✓
Explicit indication of frequency	✓	✓	✓	✓	✓			
Minimum frequency of publication	✓					✓	✓	
Rules for the presentation of text and instructions for authors			✓	✓	✓	✓	✓	✓
Rules for the structuring of references				✓	✓	✓	✓	
Information about publication ethics and conflict of interest	✓						✓	✓
Automated management of the editorial process			✓		✓			
Rights					✓			
Evaluation process								
Assessment and peer review	✓	✓	✓	✓	✓	✓	✓	✓
Information about the review process	✓		✓	✓	✓	✓	✓	✓
Double-blind evaluation			✓		✓			
External evaluators				✓	✓	✓	✓	✓
Annually publishes the list of reviewers			✓					
Dates of receipt and acceptance of manuscripts			✓	✓	✓	✓	✓	

to be continued

continues

Criterium	Scopus	ISI-WoK	FECYT	Latindex	RedALyC	SciELO	LILACS	MEDLINE
Formal aspects								
ISSN	✓	*	✓	✓	✓	*	✓	✓
Abstracts	✓	✓	✓	✓	✓	✓	✓	✓
Keywords		✓	✓	✓	✓	✓	✓	
Article titles in English (and in the original language of the text)	✓	✓	✓		✓	✓		✓
Abstracts in English (and in the original language of the text)	✓	✓	✓	✓	✓	✓	✓	✓
Keywords in English (and in the original language of the text)		✓	✓	✓	✓	✓	✓	
Instructions for authors in English					✓			
Basic identification data (title, ISSN, etc.) on the initial page			✓	✓	✓			
Complete bibliographic information and reference quality		✓	✓		✓			✓
References in the Roman alphabet	✓	✓						
Bibliographic heading on the first page of the article			✓	✓	✓			
Bibliographic heading on each page of the article				✓	✓			
Mention of the publisher			✓	✓	✓			
Indication of the place of issue of the journal			✓	✓	✓			
Indication of the address or e-mail of the journal			✓	✓	✓			
Reference to the director of the journal or its publisher			✓	✓	✓			
Identification of the Editorial Board			✓	✓	✓	✓	✓	
Mention of the institutional affiliation of the editorial board members				✓	✓		✓	
Full name of the authors in each paper				✓	✓			
Mention of the authors' institutional affiliation		✓	✓	✓	✓	✓		✓
Graphic presentation							✓	✓

FECYT Fundación Española para la Ciencia Y Tecnología, established in 200 1to promote science in society (http://www.fecyt.es)

Latindex Index of scientific journals, edited in Latin America, Span and Portugual, developed in 1995 at Universidad Nacional Autónoma de México (UNAM) (http://www.latindex.unam.mx)

RedALyC Red de Revistas Cientificas de America Latina y el Caribe, España y Portugal), a project promoted by the Universidad Autónoma de Estado de México (UAEM), to contribute to the dissemination of scientific output in Latin America (http://www.redalyc.org/redalyc/media/principal/auxHemeroteca/presentacion.html)

TOPIC MAPS ON OPEN ACCESS PUBLISHING

The Budapest Open Access Initiative, also known as the Budapest Declaration or BOAI, was established in January 2002, and was the first declaration to define OA literature as digital, online, free, and exempted from most copyright and licensing restrictions.

Alongside the BOAI, the Bethesda Statement and the Berlin Declaration on OA to knowledge in the sciences and humanities, both established in 2003, marked the beginning of what is now known as the OA movement.

According to these declarations, there are two complementary ways of achieving OA to scientific outputs:

- self-archiving in OA repositories (also known as the green route);
- publishing in OA journals (also known as gold route).

OA repositories are digital archives that collect, preserve, and disseminate scholarly outputs of either a specific subject area (disciplinary repositories) or of a particular institution (institutional repositories). OA journals do not restrict access and use to the material they publish.

Topic maps on OA can be grouped under four main modules:

- M1. Introduction to OA;
- M2. OA repositories;
- M3. OA journals;
- M4. OA polices.

M1. Introduction to OA

Definition

The term “open access” is now widely used in at least two senses. For some, “OA” literature is digital, online, and free of charge. It removes price barriers but not permission barriers. For others, “OA” literature is digital, online, free of charge, and free of unnecessary copyright and licensing restrictions. It removes both price barriers and permission barriers. It allows reuse rights which exceed fair use. Most of our success stories deliver OA in the first sense, while the major public statements from Budapest, Bethesda, and Berlin (together, the BBB definitions of OA) describe OA in the second sense.

To remove ambiguity, Peter Suber and Stevan Harnad proposed the use of the term “gratis OA” for the removal of price barriers alone and “libre OA” for the removal of price and at least some permission barriers.

There are various misunderstandings about OA. It is not self-publishing, nor a way to bypass peer-review and publication, nor is it a second-class, cut-price publishing route. It is simply a means to make research results freely available online to the whole research community and to other potential users of the research literature.

Figure 50 shows the basic concepts of OA and the benefits to researchers’ institutions governments and society.

The OA movement (as a social movement) traces its history at least back to the 1960s, but became much more prominent in the 1990s with the advent of the Digital Age. The Internet and the new networked technologies applied to science have also favoured the progress of OA.

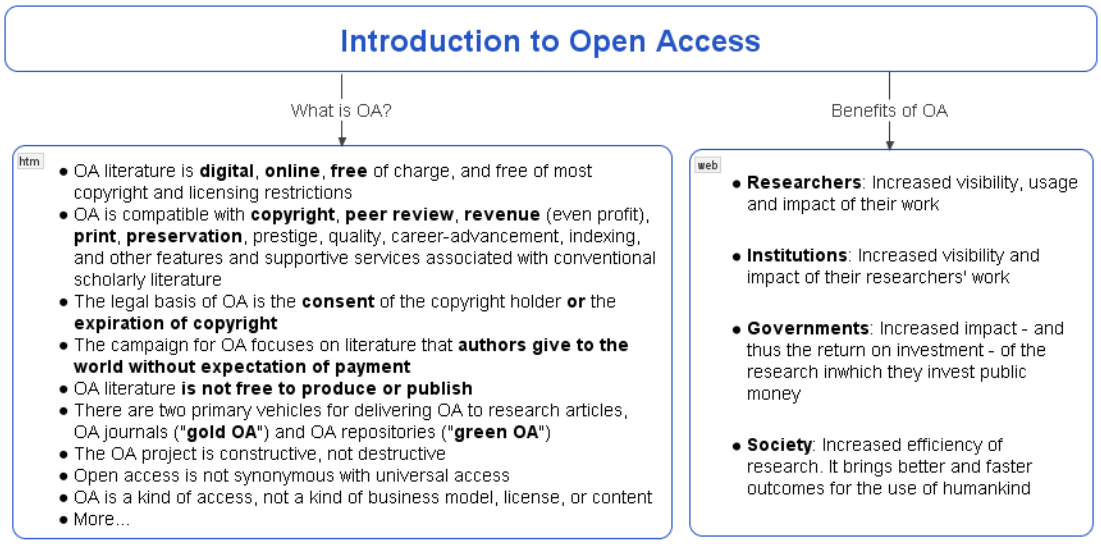


Figure 50. Scheme: introduction to OA

The OA movement has expanded globally and won additional more followers and advocates as a response to a series of events that occurred within the scientific community, university libraries and publishers starting in the late 1980s. These include:

- increased costs of subscriptions (the "serials crisis");
- increasing imposition of publishing contracts to include bundled packages "big deals";
- control of copyright exercised by publishers because the web brought the possibility of dissemination without barriers.

A number of initiatives arose as responses to the above situations such as:

- a letter published by the Public Library of Science (PLoS) in April 2001 to support OA to knowledge, signed by thousands of citizens;
- the pressure exerted by the editors themselves: Journal Declarations of Independence;
- the pressure exerted by universities: press releases in favour of OA or boycotts to certain publishers.

Peter Suber's OA overview clearly describes what OA to scholarly outputs means: "OA literature is digital, online, free of charge, and free of most copyright and licensing restrictions".

Here follow some considerations and statements contributing to understand the OA movements as a whole:

- OA removes price barriers (subscriptions, licensing fees, pay-per-view fees) and permission barriers (most copyright and licensing restrictions). The PLoS shorthand definition ("free availability and unrestricted use") succinctly captures both elements. Indeed, there is some flexibility about which permission barriers to remove. For example, some OA providers permit commercial re-use and some do not. Some permit derivative works and some do not. But all of the major public definitions of OA agree that merely removing price barriers, or limiting permissible uses to "fair use" ("fair dealing" in the UK), is not enough.
- The Budapest (February 2002), Bethesda (June 2003), and Berlin (October 2003) definitions of "open access" are the most central and influential for the OA movement.
- The BOAI states: "There are many degrees and kinds of wider and easier access to this literature. By OA to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts

of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

- The Bethesda and Berlin declarations state that a work is OA, if the copyright holder consents in advance to "copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship".
- When we need to refer unambiguously to sub-species of OA, we can borrow terminology from the kindred movement for free and open-source software. Gratis OA removes price barriers alone, and libre OA removes price barriers and at least some permission barriers as well. Gratis OA is free of charge, but not free of copyright of licensing restrictions. Users must either limit themselves to fair use or seek permission to exceed it. Libre OA is free of charge and expressly permits uses beyond fair use.
- In addition to removing access barriers, OA should be immediate, rather than delayed, and should apply to full texts, not just abstracts or summaries.
- OA is compatible with copyright, peer review, revenue (even profit), print, preservation, prestige, quality, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature. The primary difference is that the bills are not paid by readers and they do not function as access barriers.

Subjects for discussion

- Which is the difference between the green and the gold routes of OA?
- Is OA literature peer-reviewed?
- What is the difference between "gratis and libre" OA?
- Is there any need to modify copyright law due to OA?

Origin and timeline

The landmark events in the history of OA are reported in Figure 51. This timeline started as a non-wiki timeline maintained by Peter Suber, and moved to OAD in 2009.

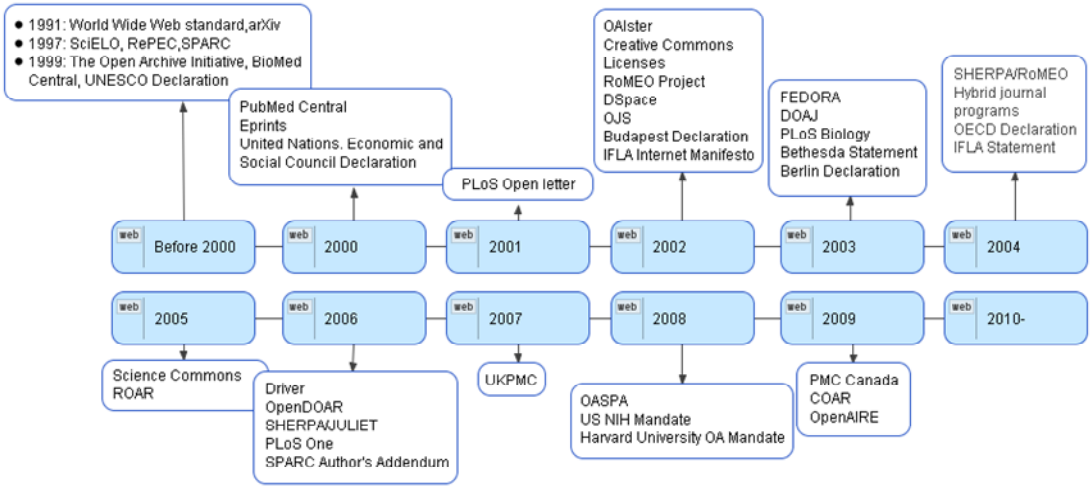


Figure 51. Scheme: OA timeline

Initiatives around the world

The global nature of both the academic community and of the ICT infrastructures have given rise to the global OA initiatives (Figure 52).

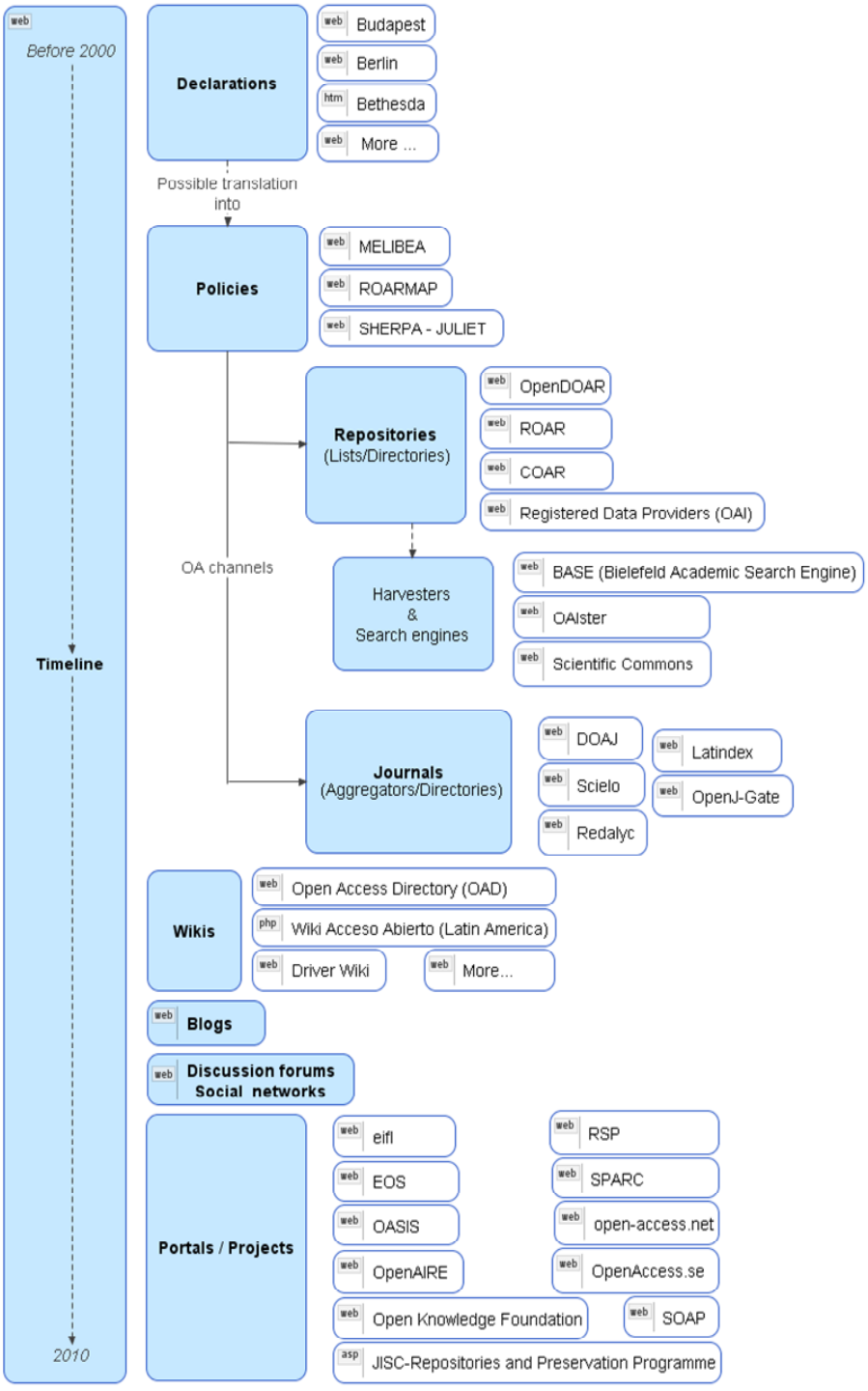


Figure 52. Scheme: OA initiatives worldwide

The point of departure of the worldwide OA movement is usually taken to be the declaration resulting from the BOAI in 2001, which gave rise to a number of similar Declarations worldwide. However, OA to scholarly literature has been taking place since the early 90's, with the first repository (arXiv) for the sharing of research results being established in 1991. Also in the field of health and medical related literature, since 1998, there have been relevant initiatives in Latin America with the setting up of the VHL and SciELO. The translation of Declarations in support of OA into OA policies and mandates at the local and institutional level has been patchy: some governments and institutions have seen this type of conversion as a precondition to OA success, while others have had a more laissez-faire approach. The development and growth of OA channels in different countries has also assumed varying patterns worldwide: in some countries, OA journals have taken off earlier and are thus more numerous than repositories, while in others, the two kinds of OA routes have grown together, but there has been more sustained investment in repository infrastructures.

Worldwide public declarations of support for OA have been a positive starting point. But this trend has given rise to an uneven tendency of OA mandate and policy implementation at university or research-funder level. ROARMAP (Registry of Open Access Repository Material Archiving Policies), for example, demonstrates that there is a concentration of such institutional mandates in the countries of the northern hemisphere and in Australasia, revealing the need for those under-represented countries that have issued the broad declarations in support of OA to now push for OA implementation at the institutional level.

Even so, the setting up of OA institutional and subject repositories continues to grow, but again, unevenly. OpenDOAR (Directory of Open Access Repositories) includes (August 2012) 1032 (47.2%) repositories in Europe, 466 (21.3%) in North America, 385 (17.6%) in Asia, 163 (7.5%) in South America, 59 (2.7%) in Australasia, 55 (2.5%) in Africa, and 14 (0.6%) in the Caribbean. In some countries the repositories may have different names such as: "digital library", "digital archive", "electronic library", "digital collection", "digital repository.

In some continents where the implementation of OA repositories has been slower, the setting up of OA journals has been prevailing. This is certainly the case for some Latin American countries, where both SciELO and the more recently RedALyC (Red de Revistas Cientificas de America Latina y el Caribe, España y Portugal) provide access to a substantial number of OA journals publishing predominantly "regional content for regional and global use".

The identified need for such journals in these regions arose from the historical situation of their exclusion from publishing in journals from the North, due to linguistic barriers and distinct research agenda focus, and also crucially due to the exorbitantly high costs of subscribing to such journals. The important position of OA journals in these regions can be illustrated by the fact that Brazil, with its circa 473 OA journals, is the "3rd largest publisher of OA journals in the world, only second to the USA and the UK", while the same country still only has 29 repositories.

The earlier focus on OA to journals in Latin America, relative to the spread of repositories, is in part due to the fact that their setting up has been subsidised by government grants, and also due to a tradition of well-publicised initiatives seeking to open up access to journals in developing nations. For example, the World Health Organisation's HINARI Programme (Access to Research in Health Programme) was set up in partnership with major journal publishers, to provide free or low cost access to the health-sciences related literature in developing countries fulfilling GNI *per capita* criteria. Such criteria have excluded certain countries from the benefits (e.g. Argentina, Brazil, Chile, Venezuela), a fact which has possibly also represented an incentive to set up OA journals in those countries.

Many Latin American and Caribbean academics still seek to first publish in high-impact subscription journals originating outside their continent (usually northern countries), due to the prestige, and concomitant career advancement, related to such publishing practice.

This also implies that the setting up of OA repositories in the institutions of those same academics assumes an even greater relevance and urgency, so that copies of such papers can be deposited for wider, free access and use by their compatriots.

On the contrary, in countries, like Portugal, without a well established tradition of journal publication but a higher degree of internationalization of research activities, the focus of OA development has been on the setting up of institutional repositories and policies.

The global nature of both the academic community and of the ICT infrastructure, gives rise to the equally global nature of OA initiatives. But it is possible that the existence of a "digital divide" – brought about by, among other factors, the high costs of ICT infrastructure and concomitant limited access to telephone lines and other data-transfer methods – will continue to militate against reaching a totally even playing field. Even so, OA can be clearly identified as a factor potentially contributing to the reduction of current inequalities in access to the research literature, despite these infrastructural limitations.

Currently there are a growing number of OA initiatives, projects and organizations, both at national, regional and international level. The Open Access Scholarly Information Sourcebook (OASIS) (www.openoasis.org) has recently launched the OA Map, which aims to chart the growth and development of OA globally.

Figure 53 shows a scheme of the major OA initiatives in health sciences.

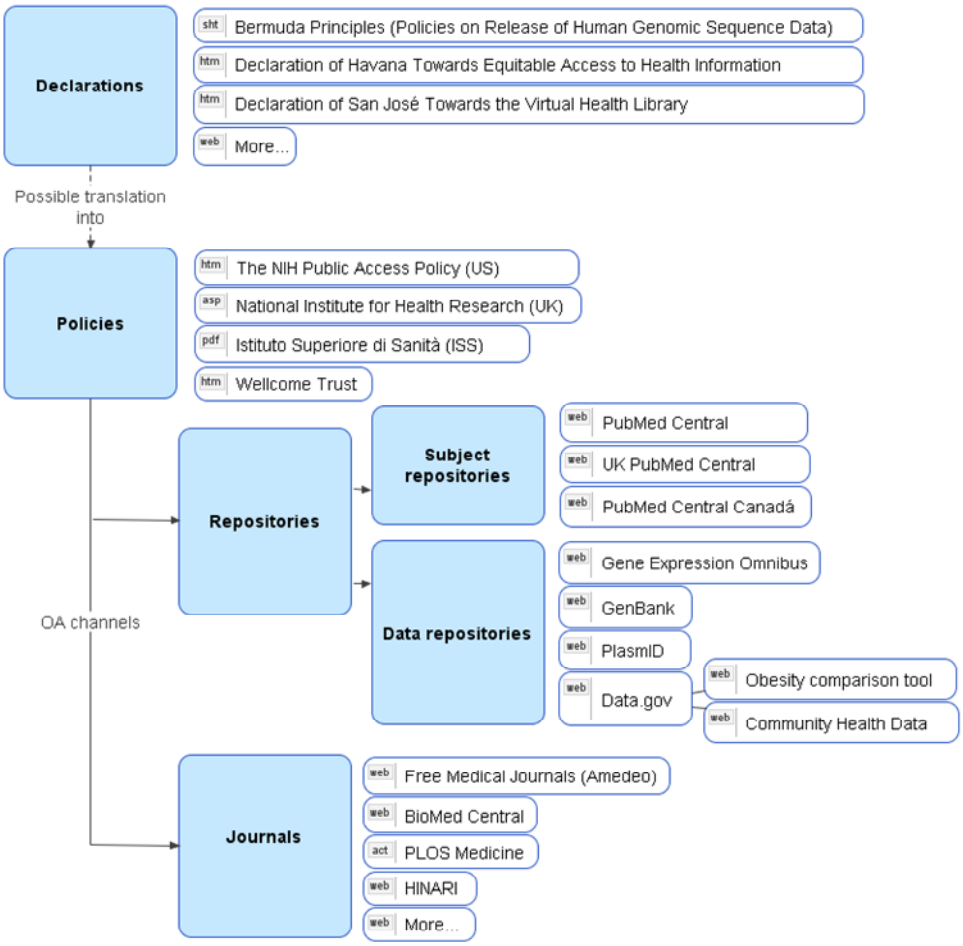


Figure 53. Scheme: OA initiatives in health sciences

Subjects for discussion

- Which technological conditions existed, in your opinion, to permit the OA movement to really take off at the end of the 1990s, early 2000s?
- Do you think that official declarations of support and encouragement for OA are sufficient, or do they need to be supported with some sort of action? If you think the latter is right, what kind of policymaking decision and / or action would you take?
- In which broad ways has the spread of OA to scholarly literature differed between continents, and what are the socioeconomic and historical aspects which have, to a certain degree, determined such differences?

Advocacy

Many of the technological solutions in support of publishing and dissemination in OA journals and repositories have been refined to the point of being effective and economical. Yet, in the last decades, OA advocacy initiatives are required to inform and raise awareness of the existence of such OA channels for the dissemination of research and research primary data.

It is by now well recognised that the uptake of OA dissemination options for research outputs and the use of OA repositories require, above all, a change in the behaviour of researchers from the scientific community, in conjunction with supportive and normative institutional procedures in place, e.g. OA mandates. The set of activities that have as their objective the promotion of OA modes of dissemination and the encouragement of researchers and other relevant stakeholders to incorporate such modes into their existing workflows, is usually denominated "advocacy".

In the common use of the term "advocacy" in the English, it means to espouse, recommend and plead for a certain position, argument or group, usually acting on behalf of that group. A broader approach to advocacy regards it as a set of activities that will encompass networking, community development and lobbying. Advocacy participants seek to reframe issues, reconfigure current discourse, introduce new ideas, and in so doing, attract attention and encourage action.

These would be informative campaign-type, "downstream" advocacy initiatives. However, it is now acknowledged that merely informing researchers and other relevant stakeholders of the benefits of OA and of the existence of an OA infrastructure is not sufficient to bring about the desired change in researchers' publishing behaviour. There is a need to develop advocacy initiatives that will effectively contribute to a contextual change in the institutional workflows that can alter the cues and rewards from the institutional environment to encourage researchers to deposit a copy of their research in the institutional repository. Advocacy therefore also needs to have a strong "upstream" component, which focuses on policy making actions that can be translated into effective change at the academic workflow level to facilitate the researchers' choice for OA. Such "upstream" activities might include the "lobbying" of key influential players in the institution or network of institutions.

Figure 54 shows advocacy suggestions to promote OA within different targets through upstream and downstream initiatives.

On one level, advocacy activities can focus primarily on drawing attention to the new dissemination practices to be adopted by researchers, explaining, clarifying and clearing up doubts. Such advocacy initiatives are "downstream" (or "bottom-up") in the sense that they target individuals on a cognitive level, in their role of rational decision-makers operating in a context in which they can freely and individually take decisions.

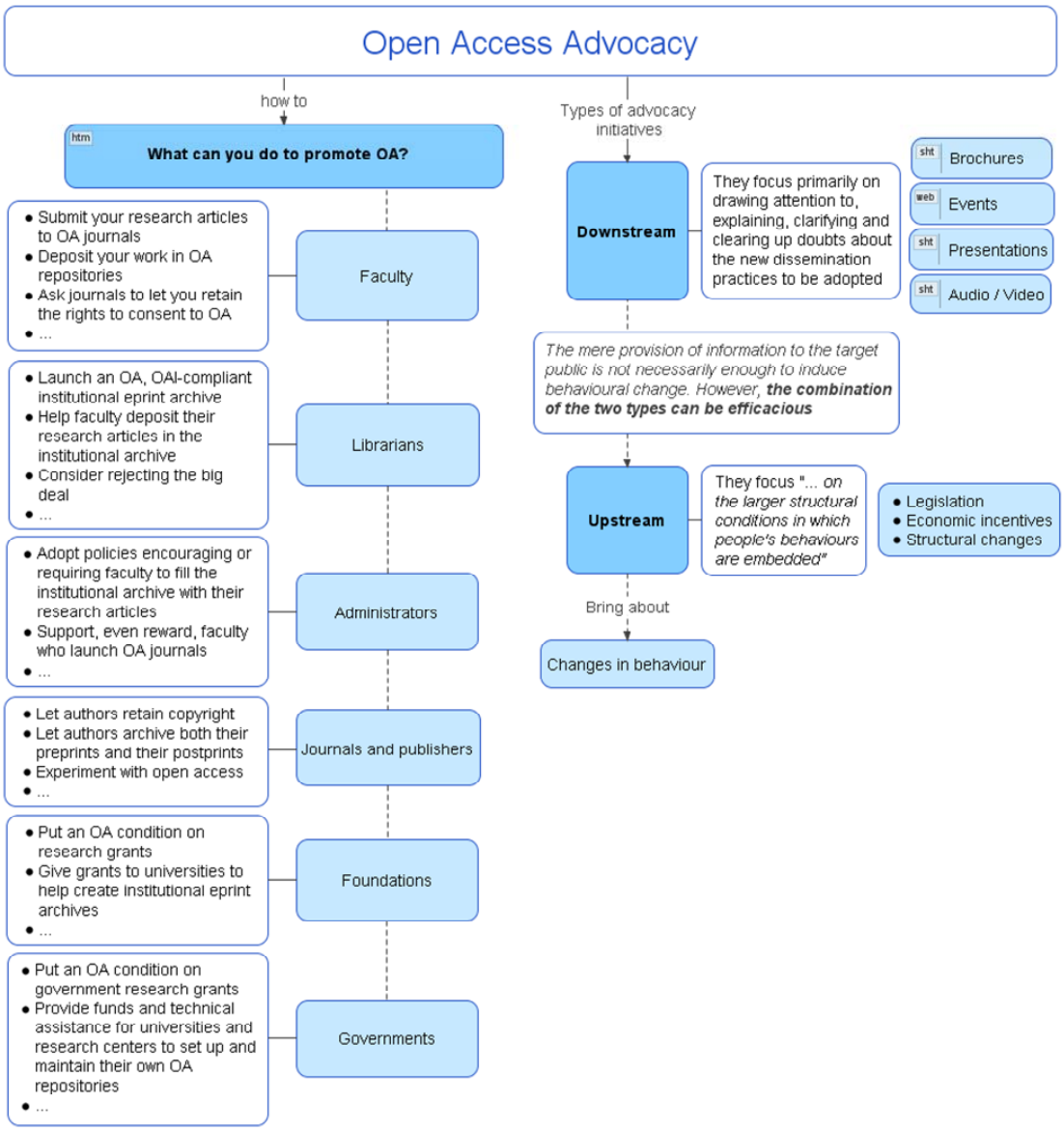


Figure 54. Scheme: OA advocacy

Information campaigns usually operate on this level. However, the mere provision of information to the target public is not necessarily enough to guarantee their engagement and identification with the issues divulged, even if they do seem to agree with the concepts communicated. That is, there is no identifiable linear cause-effect relation between clearly communicating a message, and inducing a behavioural change in the target audience. Contexts and social structural factors that maintain habits must be considered in order to bring about behavioural change, and not a mere change of mind. These authors point out that the effectiveness of individual-centred, informational campaigns is reduced even further when aimed at audiences who have "strong habits", meaning automated and repeated habit performance that are "cued" and rewarded by the environment which nurtures and encourages

that habit. The individual is almost impervious to new information because it clashes with the expectations produced by the strong habit, and so new information would in turn, hamper the automated decision-making process. Scientists and researchers, suffering from pressurised work routines, hardly notice that they are being exhorted to change their publishing habits to OA and deposit in repositories, especially if their institutional environment is not providing them with the appropriate procedural cues and incentives to facilitate such a change.

If the institutional environment takes a position to induce or facilitate certain habits and practices, changes might be also facilitated. In that sense, "upstream" advocacy will be more effective. This type of advocacy intervention focuses on the larger structural conditions in which people's behaviours are embedded. Thus, upstream interventions may consist of economic incentives, legislation, or structural changes in the performance environment. These interventions aim to provide contexts and societal structures that promote and sustain desired behaviour. Again, the relevance of this scenario to advocacy in OA and repositories is evident: it has been heuristically observed that information leaflets on their own don't work, no matter how flashy they are. Advocacy work with the significant key players (university administrators, grant-awarding agency representatives, politicians) aims to achieve more long-term and deep-seated structural changes institutionally and inter-institutionally.

It could be argued that researcher-authors at the beginning of their careers have "weaker" publishing habits and will therefore be more "open" to downstream, information campaign-type interventions introducing new ideas, whereas more established researcher-authors have strong publishing habits in the "old mode" and require upstream advocacy.

The institutional *status quo* can constitute a formidable barrier to change in that it facilitates and even incentivises the continuation of old habits.

It is not being claimed here that target audiences are impervious to "downstream" advocacy initiatives, but that given the context in which researcher-authors work such downstream initiatives on their own, despite being informative, will have limited impact.

A combination of the two types of advocacy can be effective, starting with the downstream informative activities on the frontline, and ending with the use of more policy-influencing activities.

Subjects for discussion

- What do you think would be the most appropriate term(s) in your language, to best convey the concept of "advocacy" when using it in the domain of OA journals and OA repositories?
- Do you think the conceptual distinction between "downstream" and "upstream" advocacy initiatives and activities is useful, when considering advocacy activities in the OA domain?
- Why do you think that researchers in your national or institutional context may not respond to, or change their behaviour in relation to, downstream advocacy initiatives?
- How would you start setting up an OA advocacy strategy in your institution? What components do you think would be essential to such a strategy? What do you envisage would be potential barriers to its success? Who do you identify as the key actors for OA advocacy activities in your institution?

The effect of OA on citations

Academic researchers work under the dictum "publish or perish" and they wish that their published research has a positive impact on their peer community. Article impact – the number of times an article is cited – is of great interest to publishing academic researchers, chiefly because it is regarded as being a measure of the impact of a given piece of research.

Today, the IF is used to rank journals and evaluate and rank institutions and their academics; in short, the IF is used as a surrogate measure of research quality.

The positive effect of OA on the number of citations of articles has been analysed, proven and reported in research on the subject, and has given rise to the concept of the "Open Access Citation Advantage" (OACA). An OA boost to citation is also discernible when articles are deposited to repositories simultaneously to submission to high prestige journals. Because OA dissemination of research via repositories is flexible and free of the publishing system's time constraints, it provides an "early advantage", so that the sooner articles are made openly accessible, the sooner their citation advantage will be evident.

The effect of OA on citations is sketched in Figure 55.

Subjects for discussion

- Why do scientists generally value impact of their published work?
- How has OA been proven to affect the IF of research?
- What advantages do OA forms of research dissemination have over traditional forms of research publication when considering the citation impact?

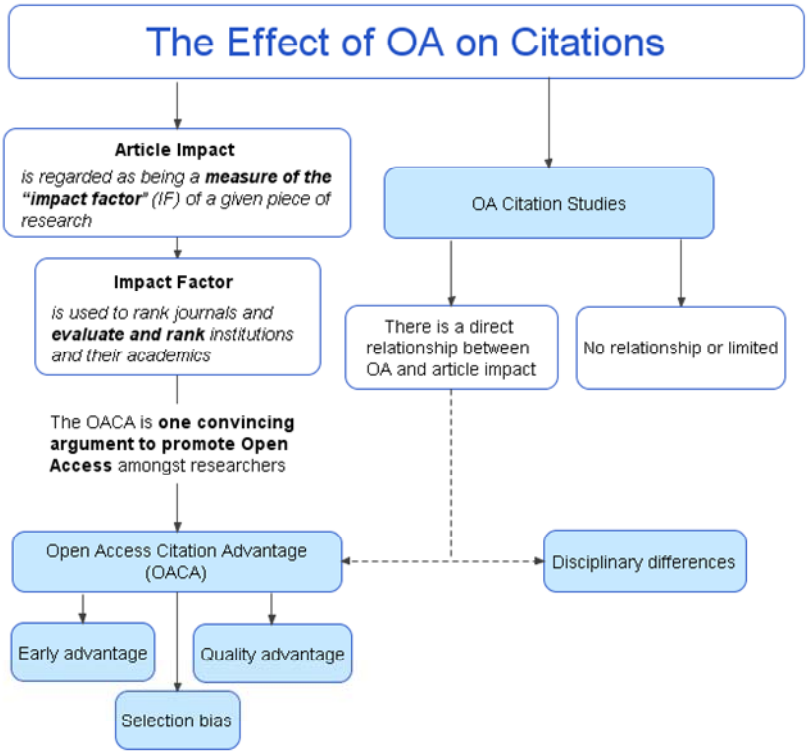


Figure 55. Scheme: the effect of OA on citations

M2. OA Repositories

ArXiv, established in 1991 for the physics community, is generally considered to be the first OA repository. Despite the establishment of other disciplinary repositories during the 1990s, the number of repositories was still very low at the end of the decade. The "boom" in the creation of repositories occurred in the new millennium, building on the technical foundation of the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH), and its increased visibility and awareness in the research community following the first OA initiatives and Declarations (Budapest, Bethesda and Berlin). Currently there are more than 2000 repositories registered in the most important repository directories: the OpenDOAR and the ROAR (Registry of Open Access Repositories). The geographical distribution of repositories (as can be observed on the Repository66 mash up) is similar to the world scientific output distribution, with almost 2/3 located in Europe and North America and also a growing number from fast developing countries and regions, like China, India and Brazil. In October 2009 the Confederation of Open Access Repositories (COAR), an organization aiming to connect repository initiatives and communities worldwide, was created.

There are three main types of OA repositories:

- *Subject/disciplinary repositories*
  established to collect material in particular disciplines or subjects (the two best known are arXiv and PubMed Central, but there are currently more than 200 repositories of this type).
- *Institutional repositories*
  established by individual research institutions (universities, research centres, laboratories), to collect, preserve, and disseminate the intellectual output of the institution. Currently there are approximately 1500 institutional repositories worldwide.
- *Data repositories*
  established by a variety of different types of organizations to collect, preserve, and facilitate the sharing of datasets, resulting from research activities. This type is gaining increasing relevance.

Subject repositories

There is a general consensus that subject repositories have been around longer than their institutional counterparts and in some senses, they have set the tone for the OA repository movement. Some disciplines, like physics, computer science. This may be explained by the structural attributes and dynamics of research in such subject areas that encourage the greater free circulation of pre-prints and research reports. It should be noted that what might be termed a "subject repository" could in fact be more accurately described as subject-related service providers that harvest structured data from many subject-related data providers, subsequently allowing the user to search across many sources distributed worldwide from a single access point. Finally, the growth in data-intensive science arguably implies that the subject-centred focus will logically be the organising principle of repositories storing research datasets. Figure 56 shows some characteristics of subject repositories with specific reference to the health sector.

Repositories organised by subject or academic discipline are referred to as subject repositories. The organisation or institution responsible for a given subject repository can vary over time and change its physical location.

The most famous subject-based repository is called arXiv and is a case in point. It was set up by Paul Ginsparg in 1991 at the Los Alamos National Laboratory, but moved to Cornell University in 2001, and has been funded by the US Department of Energy and the National Science Foundation (NSF), and today is funded by Cornell University Library and supporting user institutions.

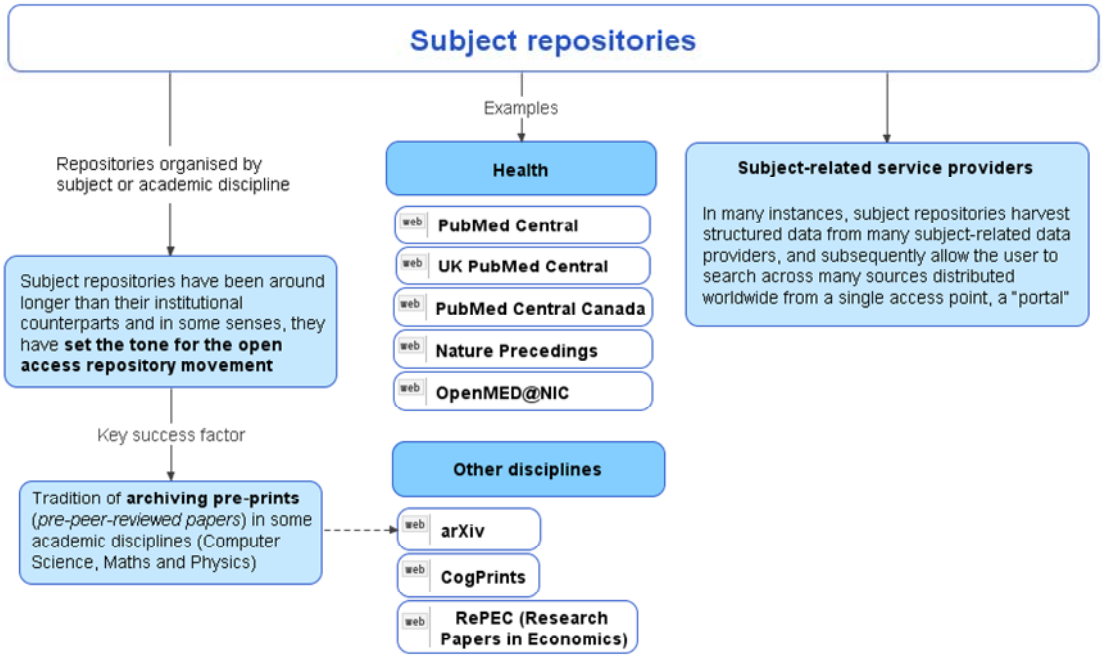


Figure 56. Scheme: subject repositories

ArXiv has especially strong collections in high energy physics, but also research output in physics, maths, computer science, quantitative biology, quantitative finance and statistics. The hosting, funding, and governance models of the top subject repositories indicate a collaborative nature of their development: it is rare that a single body hosts, funds, and governs a subject repository.

With the growth in data-intensive science, the subject-centred focus will very likely be the organising principle of repositories storing research datasets. This will also be due to the common standards and the specificity of the software requirements needed to represent and manipulate such data. Microbiologists already have to submit plasmids, gene, nucleotide and protein sequences to shared databases before publishing research results which refer to these sequences (e.g. see "Instructions for BMC Microbiology authors" at BioMedCentral).

Subject repositories can be located from the OpenDOAR, by selecting "Disciplinary" from the "Repository Type". This result can then be filtered by "subject area" and continent, if so desired.

Subjects for discussion

- In broad terms, how do subject repositories differ from institutional repositories? Would you consider implementing a subject repository at your institution and why? Do you think the two types of repository could be compatible and/or integrated at your institution?
- Why are some academics more likely to use a subject repository than others? How would you encoure academics at your institution to use a subject repository, if your institution has not already set up a repository?
- Why are some academics more likely to use a subject repository than others? How would you encoure academics at your institution to use a subject repository, if your institution has not already set up a repository?

Institutional repositories

Institutional Repositories (IRs) are digital collections of the intellectual output of research institutions. IRs are more recent than subject repositories but are being developed, at an increased rate, in the last decade, totalling more than 1500 currently. The reasons for the establishment of institutional repositories are related with the growing awareness and adoption of OA principles by research institutions, and also because there is a growing understanding that IRs may be a powerful institutional tool for managing and monitoring the research activities and promoting the institution image and impact.

Deposit of research outputs in institutional repositories can be made by authors themselves (when it is called self-archiving) or through the assistance of repository/library staff, with mediated deposit services, or content harvesting policies from journals, subject repositories or other information sources.

The purpose, scope and type of digital collection of individual IRs are variable. Most of the existing institutional repositories are strongly connected with the OA objectives, with their collection focused on institutional research outputs. A growing number of repositories are also collecting books and book chapters, as well as an increasing variety of datasets composed of "simple" or "complex/compound" digital objects.

In several institutions IRs are also used beyond the purpose of OA to research output. Teaching and learning materials are not rare in the collections of IRs. And some institutions even use their repositories to host collections of "heritage" digitized materials (old publications from the institution, images, researchers' notebooks). Figure 57 shows the main objectives, benefits and obstacles relating to IRs.

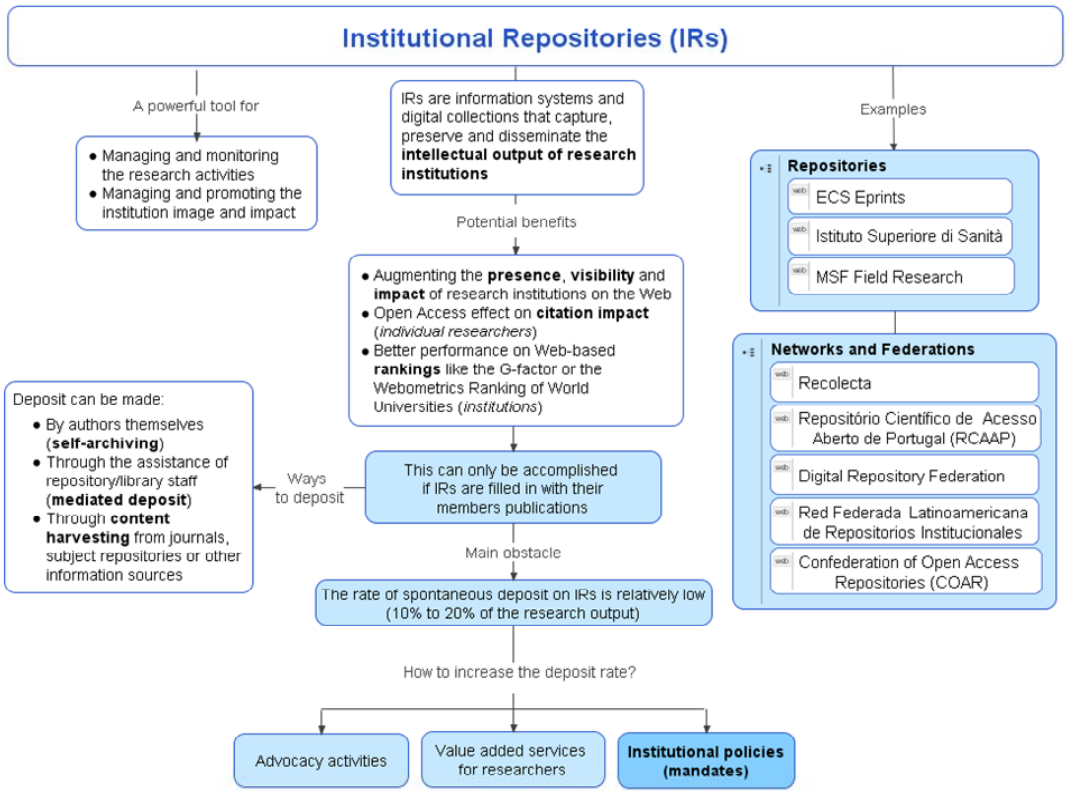


Figure 57. Scheme: institutional repositories

IRs are information systems and digital collections that capture, preserve and disseminate the intellectual output of research institutions (universities, research institutes, etc.).

IRs, with different designations, started to be established almost one decade after the first subject-based repository (arXiv) was created. In fact, one of the first institutional repositories was the ECS Eprints, from the School of Electronics and Computer Science in the University of Southampton, created in 2000.

After the release of the first software for the creation of IRs in 2000 (Eprints), the last quarter of 2002 signalled a new open source platform for repository creation (DSpace released in November) and the general adoption of the term "institutional repository", after the publication of the SPARC position paper, and then reinforced by Clifford Lynch in an article on IRs in early 2003.

One of the reasons for the rising rhythm of repository creation (one per day, worldwide, in the last three years) is the growing awareness among institutional leaders and administrators of the potential benefits of OA and IRs for their institutions.

IRs may be a powerful tool for two complimentary and interconnected purposes: managing and monitoring research activities; managing and promoting the institution image and impact. Having a complete record of its research output in an easily accessible form in its own IR provides the institution with the means to measure, monitor, assess, and to manage overall its research activities, from the individual researcher level to the global institutional level.

Simultaneously, IRs contribute to augment the presence, visibility and impact of research institutions on the Web. By showcasing their current research outputs through their repositories, institutions are increasing their visibility and accessibility, beyond those which had previous access to the publications (through subscriptions or other means), through generic (i.e. Google) or specific (i.e. OAISTER) search engines that harvest repository content. So, not only can individual researchers experience the OA effect on citation impact, but also institutions may perform better on Web-based rankings like the G-factor or the Webometrics Ranking of World Universities.

In Europe, several leading organizations, at European (like the European University Association) or national level (like the Portuguese Rectors Council), have recommended that research institutions should not only create and maintain their IRs, but also establish policies requiring that their researchers deposit (self-archive) their scientific publications in their IR.

The call for institutional policies (mandates), requiring self-archiving from the members of the institution on the IR, has resulted from the observation that the rate of spontaneous deposit on IRs is relatively low (10% to 20% of the research output), and the fact that the potential institutional benefits of IRs can only be accomplished if they are filled in with their members' publications. There is consistent evidence that the percentage of research output deposited in repositories can be increased (by up to nearly 50%) by strong advocacy activities and by offering researchers value added services (like publication lists or researchers pages, statistics), but the percentage just reaches over 50% and closer to 100% when there are mandates in place.

In recent years, not only has the number of IRs being established been growing, but also there is an increasing number of projects and initiatives for the creation and operation of portals, networks and federations of institutional repositories. These initiatives are being developed at national level (such as Recolecta in Spain, RCAAP in Portugal, or DRF in Japan), but also on a wider scale (such as the European projects DRIVER I and II, OpenAIRE, MedOANet or the South American project "Red Federada Latinoamericana de Repositorios Institucionales de Documentación Científica").

All such initiatives show a growing trend for cooperation, networking and interoperability not only within individual repositories, but also between IRs, subject repositories and other services. With the current repository technologies and tools – OAI-PMH, OAI-ORE (Open

Archives Initiative Object Reuse and Exchange), SWORD, etc. –, it is technically quite simple to collect, aggregate and move/copy to other repository(ies) the contents once deposited in one repository.

Subjects for discussion

- Why should a research institution establish an institutional repository?
- What would be the most efficient strategy to fill in the IR of your institution?

Data repositories

With research activities creating, and depending of the availability to access, process and analyze, growing volumes of research data, the relation between research data and repositories is gaining greater importance and visibility.

Figure 58 provides a scheme for data repositories.

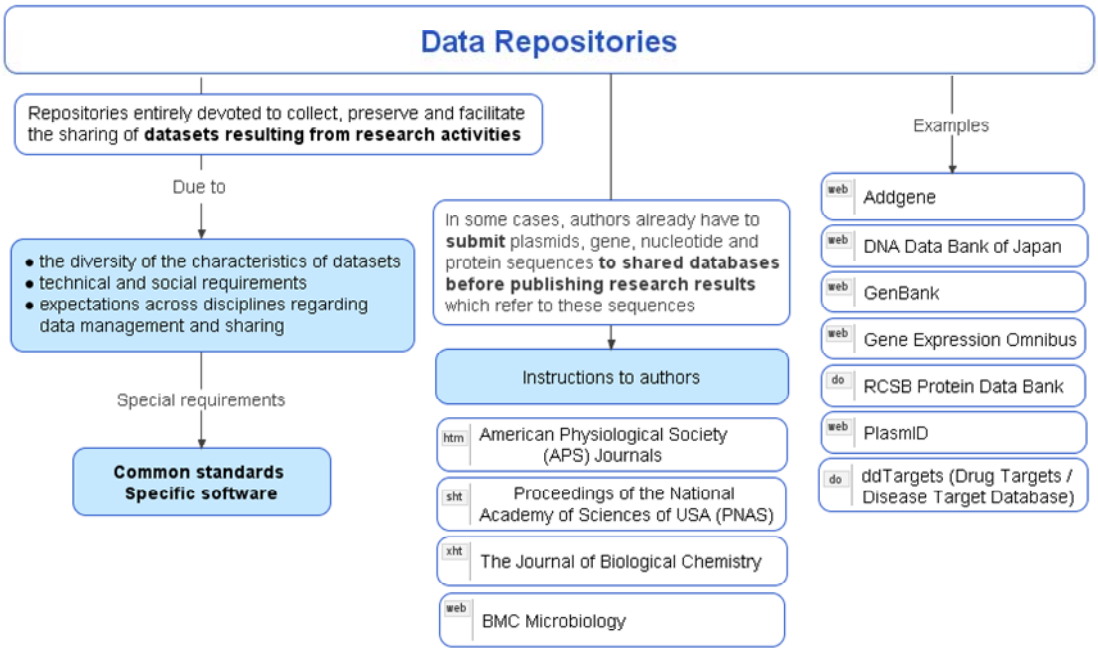


Figure 58. Scheme: data repositories

In some disciplines (like astronomy) there is already an old tradition with well established data repositories and associated standards (e.g., metadata formats for dataset description), supporting research activities based on data sharing and reuse. In several other disciplines data repositories are being created, especially in the last decade, but in some cases there is still a lack of common accepted technical standards, and data sharing and curation practices.

Beyond data repositories, repositories entirely devoted to collect, preserve and facilitate the sharing of datasets resulting from research activities, there are also some projects and experiments to use institutional repositories to host datasets produced within the institution.

Institutional repositories may have a very important role on assuring the curation, preservation and access to datasets, produced by small research groups and/or in disciplines without access to well established data repositories. But the diversity of the characteristics of datasets, technical and social requirements and expectations across disciplines regarding data management and sharing, is a great challenge to institutional repositories. There is clearly a tension between the institutional dimension (widely multidisciplinary in the case of universities) and the disciplinary dimension (with the specific requirements of each discipline) on the use of institutional repositories for research data.

Google has recently released a new tool to explore, visualize and communicate public datasets. The Public Data Explorer includes 27 datasets, some of them related to health and related sciences (i.e. Mortality in the US, Sexually Transmitted Diseases in the US, Cancer cases in the US). In order to increase the number of datasets available through this tool, the Public Data Explorer provides an interface for anyone to upload their dataset.

The Data.gov provides a list of applications, mash-ups, and visualizations of data posted on its web portal: from community health status indicators (Data visualization of the US Department of Health and Human Services), to a National obesity comparison tool, to the environmental health of the US, etc. These applications arm citizens with the information they need to make decisions every day.

On 10 January 2011 a statement of purpose signed by a group of major international funders of public health research was released. The signatories committed to work together to increase the availability of data emerging from our funded research, in order to accelerate advances in public health.

Repository technologies and standards

Despite the existence of some repositories before 1999, for current OA repositories the first and most important basis is OAI-PMH, defined in 1999. The OAI-PMH is the fundamental "standard" for assuring exposition, aggregation, access and interoperability of the contents deposited in repositories. OAI-PMH is a very simple protocol that requires the use of other standards and protocols, as HTTP (web protocol) as the transport protocol, and Dublin Core metadata, such as the "common" metadata format for interoperability among repositories. Recently the Open Archives Initiative developed and established OAI-ORE defining standards for the description and exchange of compound digital objects. The scope of these standards is much broader than OA repositories, and they are just starting to be used in the repository world.

Another relevant initiative to foster repository quality and interoperability is the DRIVER Guidelines. The Guidelines are intended for repository managers, providing guidance on how to expose digital scientific resources using OAI-PMH and Dublin Core Metadata, creating interoperability by homogenizing the repository output. The current version of the Guidelines is 2.0, with translations in Japanese, Portuguese and Spanish.

A recent initiative designed to reduce the barriers to the depositing of documents in repositories, already proving to be a powerful tool, is the SWORD protocol. SWORD is the acronym to Simple Web-service Offering Repository Deposit and is a lightweight protocol for depositing content from one location to another. SWORD allows the building of services offering important functions like depositing from multiple locations or from within standard office applications, or depositing to multiple repositories (Figure 59).

OA repositories seek and allow OA to contents but in addition they constitute the infrastructure (open) that will allow access, use, and the reuse of OA contents in a transparent way as if it were a single virtual repository that provides access to a single global object: global knowledge representation.

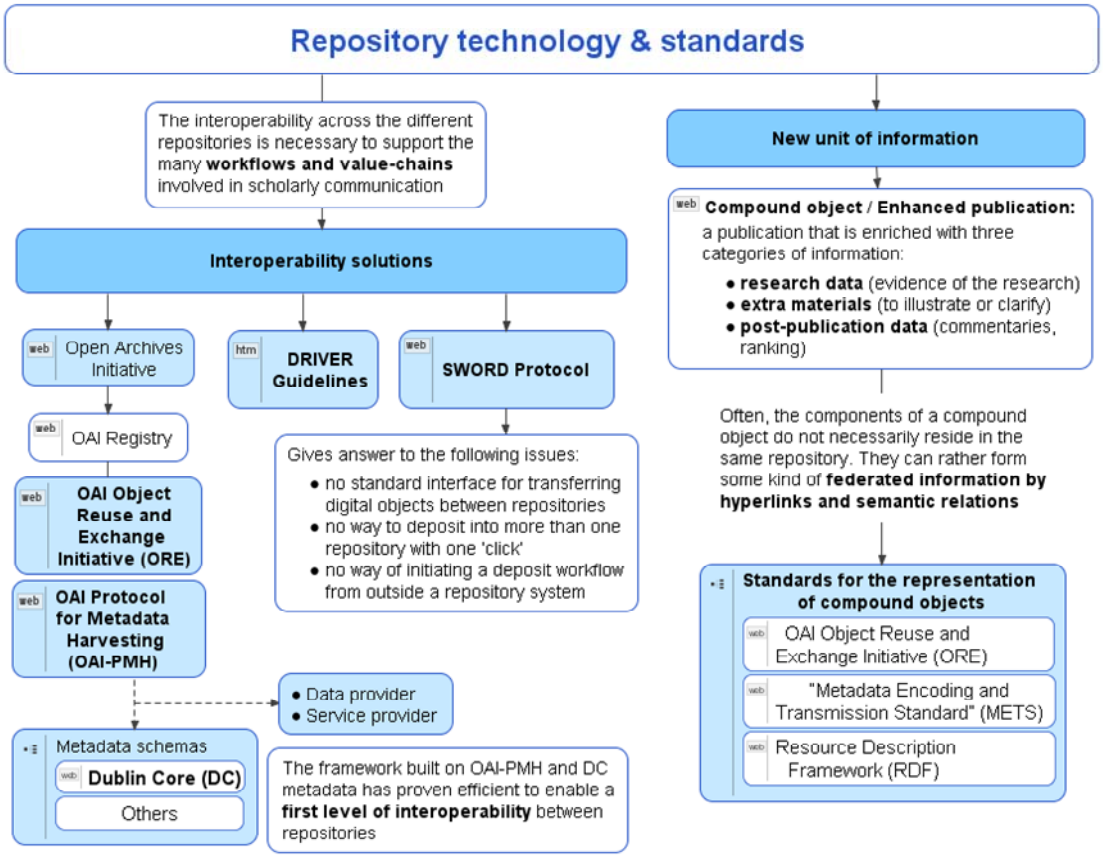


Figure 59. Scheme: repository technologies & standards

In this way, the repositories will actually contribute to the fulfilment of open opportunities promised by the Internet and new technologies and can be used to support new forms of scientific research and communication. For this aim, as mentioned in the Berlin Declaration, not only the contents but the tools (repositories) must be open, i.e. must be able to work together with other systems, interoperable and be integrated into the global infrastructure that supports science in the digital world.

A repositories network supporting the representation of global human knowledge (an interrelated contents network, distributed different interoperable repositories) accessible to all without restrictions, allowing the global scientific community to share that knowledge, display it, reuse it, analyze it, process it, and communicate it in their own work environments.

OA repositories can do more than simply make the full text of research available. In principle they can unify all scientific data and literature to create a world in which the data and literature can operate together. This capability will increase the "information speed" of science and will improve the scientific productivity of researchers. Interoperable information exchange, be it the representation of facts or processes, is vital to share knowledge successfully. This improved infrastructure will enable a true representation of global knowledge, where the complete academic research life cycle, from inception to publication, will be held in an electronic environment and the information will be openly available to all. During the development of scientific ideas and their subsequent publication, scientists will be able to

interact virtually between themselves, sharing data sources and research workflows. Readers, in turn, will be able to browse the text of an article and see related documents, all online. Scientific publication and human knowledge will become a global experience through interactive Internet.

Technologies and standards must be implemented in OA repositories so that they are not mere information islands but rather part of the global infrastructures of OA to knowledge, i.e. to be not only OA repositories but also open repositories.

Interoperability refers to the ability of two or more systems or components to exchange information and use the information that has been exchanged. Repositories need to use common standards to be interoperable.

OAI-PMH

In the field of repositories there are several standards to ensure interoperability, the best known and implemented is the OAI-PMH used as a common interface for metadata harvesting repositories.

The OAI-PMH is the fundamental standard to ensure the exposure, aggregation, access and interoperability of deposited content in the repositories. It provides a system for distributed sharing and discovery resources.

The OAI-PMH has two components:

- Data providers administer systems that support the OAI-PMH as a means of exposing metadata; and
- Service providers use metadata harvested via the OAI-PMH as a basis for building value-added services.

The OAI-PMH defines a mechanism for harvesting records containing metadata repositories. It provides a simple technical option for Data Providers to use their metadata for the provision of services based on open standards: HTTP (Hypertext Transport Protocol) and XML (Extensible Markup Language). Therefore, metadata from different sources can be assembled into a database and can provide services on the basis of this centralized collection or data "aggregation".

The implementation of the OAI-PMH can be configured to return the results using a variety of metadata schemes. At a minimum, all OAI-PMH servers should be able to return results with the unconditional Dublin Core Simple scheme (oai_dc); however, they can provide many additional schemes as they wish.

The OAI-PMH has been widely implemented in software repositories such as DSpace, EPrints, Fedora, etc. Opus has allowed the development of a multitude of services, although most have focused on search/recovery. OAI-PMH has been the basis for creating networks in many countries of national repositories and OA portals to results from national scientific production: Narcís, the Low Countries; RCAAP, Portugal; RECOLECTA, Spain; RIAN, Ireland. OAI-PMH has been the basis of the DRIVER portal, which gives free access to 2,670,000 documents in 265 stores in 36 countries.

But the OAI-PMH facilitates the creation of mediating services. These services combine the information and offer greater support to search functionality, presentation and analysis of data distributed in different files, such as:

- enriched publications: link between the article and the scientific data;
- collaboration environments;
- virtual collections;
- virtual journals ("overlay");
- new appointment systems, machine-readable;
- data mining.

Although a repository can be collected simply offering an OAI-PMH interface, the repository should be registered as on OAI-PMH Data Provider. The Open Archive Initiative

offers a registration service that increases your visibility as a data provider for service providers so that is guaranteed to be collected by them. Other service providers that also require records are Intute Search, OAIster, Scientific Commons and OpenDOAR.

DRIVER guidelines

If you want to deliver quality services over harvested metadata, it is necessary for the repositories to agree so that the implementation of the OAI-PMH and Dublin Core metadata scheme can be normalized. To this end, DRIVER guidelines were drawn up and can be used by any network repositories.

The DRIVER guidelines aim to guide the repository managers so as to ensure interoperability and compatibility with the services being offered. They are based on best practises and they are the result of collaboration at European level between repository managers, service providers and metadata experts. Its current version is 2.0 (2008) and it has been translated into Spanish, Portuguese and Japanese.

SWORD

This is a protocol that allows interoperability for the storage of digital objects between repositories and other systems.

It provides answers to the following problems:

- there is no standard interface for transferring digital objects between repositories;
- more than a repository cannot be deposited with a single 'click';
- a deposit process cannot be started from outside a repository system.

It is funded by JISC (Joint Information Systems, UK) launched in 2007 and created above the Atom Publishing Protocol (ATOMPUB).

SWORD has been implemented in the following systems:

- SWORD interfaces in several DSpace, EPrints and Fedora repositories
- Open Journal System Plugin: SWORD 1.2 Repository Deposit
- Microsoft Article Authoring Add-in for Word 2007
- SWORD Widget – For Netvibes, Igoolgle
- Facebook client
- arXiv
- BioMed Central Open Repository

There are several scenarios in which SWORD can be used as:

- *Deposit tool from a desktop*
  Instead of interacting directly with the repository, the authors can deposit the document through a user-friendly application from the desktop
- *"Save as" in a word processor*
  Authors may deposit the document directly in the repository using a plug-in "Save as" from your word processor depositing the document in the repository instead of saving it to disk
- *Multiple simultaneous deposits*
  If a writer has to deposit their work in their institutional repository but also in the repository of its founder, you can deposit it once and SWORD can be used for other deposits, so that simultaneous deposits need only one click.
- *Deposit machines*
  The laboratory equipment can deposit the results of an experiment in the repository without requiring human intervention.

Standards for representation of complex or "enriched" publications

The way scientific research is conducted in the digital environment is changing rapidly. Improvements in computer technology, networking and techniques for capturing digital, including new powerful data mining techniques, allow for more collaborative research practices. These dramatic advances in the nature of research correspond with fundamental changes in scientific communication, including changes in the nature of the communication produced and consumed in scholarly environment.

Developments in the scientific communications landscape have allowed researchers to upload and store various types of related material including text, databases, simulations, software, dynamic representations of knowledge, machine-readable chemical structures, metadata, etc. (often including files with different formats) making repository materials more heterogeneous and complex. Often components of these complex objects do not necessarily reside in the same repository, and this Federated information is only semantically related (i.e., DuraSpace).

How do we support the management of scientific results that are housed in different places, are created by different organizations, in different disciplines research settings and networks or by collaborations across disciplines and organizations?

Complex digital content stored so that its internal structure and external context can be represented explicitly, managed, and displayed on the web. All exhibit objects to the agents as a global virtual object, freely accessible, processing, visualized and analyzed in a research settings network (i.e., Cornell University and Los Alamos National Laboratory). This infrastructure will enable greater collaboration and communication between researchers and support innovative research.

Work still needs to be done internationally in order to reach a consensus on how to represent complex objects in this infrastructure. Currently the technology is moving in different directions and there is not yet a single standard in place.

Some standards have been developed. One of these is the OAI-ORE, a new effort undertaken by the Open Archives Initiative. The aim of ORE is to develop, identify, and define standards and protocols to enable repositories, agents, and services interoperate in the context of the use and reuse of complex objects (aggregations), beyond the limits of the repositories that contain them. A key aspect of this project is work with objects, not just metadata. ORE is a set of specifications that identify aggregations on the web and the relationships between their components. Thus, the work of ORE differs from OAI-PMH. This new specification will provide the basis for the development of value-added services for analysis, reuse and recasting of compound objects, especially in the areas of e-Science and scientific communication, which have been targeted by the OAI-ORE. ORE work does not imply that the specification OAI-PMH has been abandoned or replaced. OAI-PMH will continue to exist as an approach to interoperability. OAI-ORE will complement OAI-PMH, improving interoperability. OAI-ORE defines standards for description and exchange of aggregations of Web resources.

An important goal of the OAI-ORE framework is to describe the complex objects in a way consistent with the architecture of the web. This is important because scientific publications in the digital world are web resources linked to a location, an ID, and a representation.

In any case, the scope of OAI-ORE is much broader than OA repositories and is now being used experimentally in repositories.

Other standards are being used for the representation of complex objects, especially in the library environment. METS (Metadata Encoding and Transmission Standard), has been created by the Library of Congress and is aimed at providing a XML standard for transmitting digital objects. METS has also entered the software market specifically in relation to DSpace and Fedora Commons, where software developers have implemented METS native support for

ingestion and export. The capacity of METS to address large and complex digital objects makes it a suitable option for description of digital object compounds.

Moreover, they are using other standards such as the MPEG-21/DIDL, TopicMaps or RDF (Resource Description Framework).

Subjects for discussion

- How should repositories be made interoperable?
- Can existing interoperability systems, operate in the current context?
- Why do we need to work with standards?
- Should service be "global" or "local"?
- What services should a repository provide?
- What does Interoperability mean to you?
- What strategies are needed to create globally accepted guidelines?
- Are DRIVER guidelines applicable to other contexts?
- What strategies can be used to draw guidelines for repositories?
- Will librarians assume their duties in the new technological environment? Does your library need a new profile?
- How can subject repositories (such as biomedical repositories) connect in order to share knowledge?

Repositories software

The first available software to create repositories was Eprints from Southampton University in 1999. Currently there are a lot of software platforms for repository creation and management. Some are free and Open Source (DSpace, Eprints, Fedora, etc.), some are free but not Open Source (like Zentity from Microsoft) and some are commercial platforms (Digital Commons, Digitool, etc.).

Most of the repository platforms have very similar basic features, but each one of them has many other specific features and characteristics. Besides the functional and architectural aspects of the platform, other relevant aspects should be analyzed when choosing the repository platform, such as the compliance with the established standards and guidelines, the ease of installation and maintenance, and the already established user community (Figure 60).

When an institution has decided to create an institutional repository the first question that should be asked is: what is the best software platform to implement? However this question must be preceded by a consideration on its general objectives: why do we want to create a repository? which are the repository goals? what do we expect to do with the repository? what services do we want to offer and to whom?

The following questions help defining the general requirements:

- What is the main goal of the repository?
- Who are the stakeholders of the project? A question which in turn will give us the answer to what the content of the repository is targeted at.
- Which other services will interact with the repository to share information? That is, what is the organization's IT strategy, inside and outside of it?
- Do we have an appropriate assumption and enough staff to support the requirements?
- What kind of contents will be deposited on the repository? (not just documents but also learning objects, multimedia, etc.).

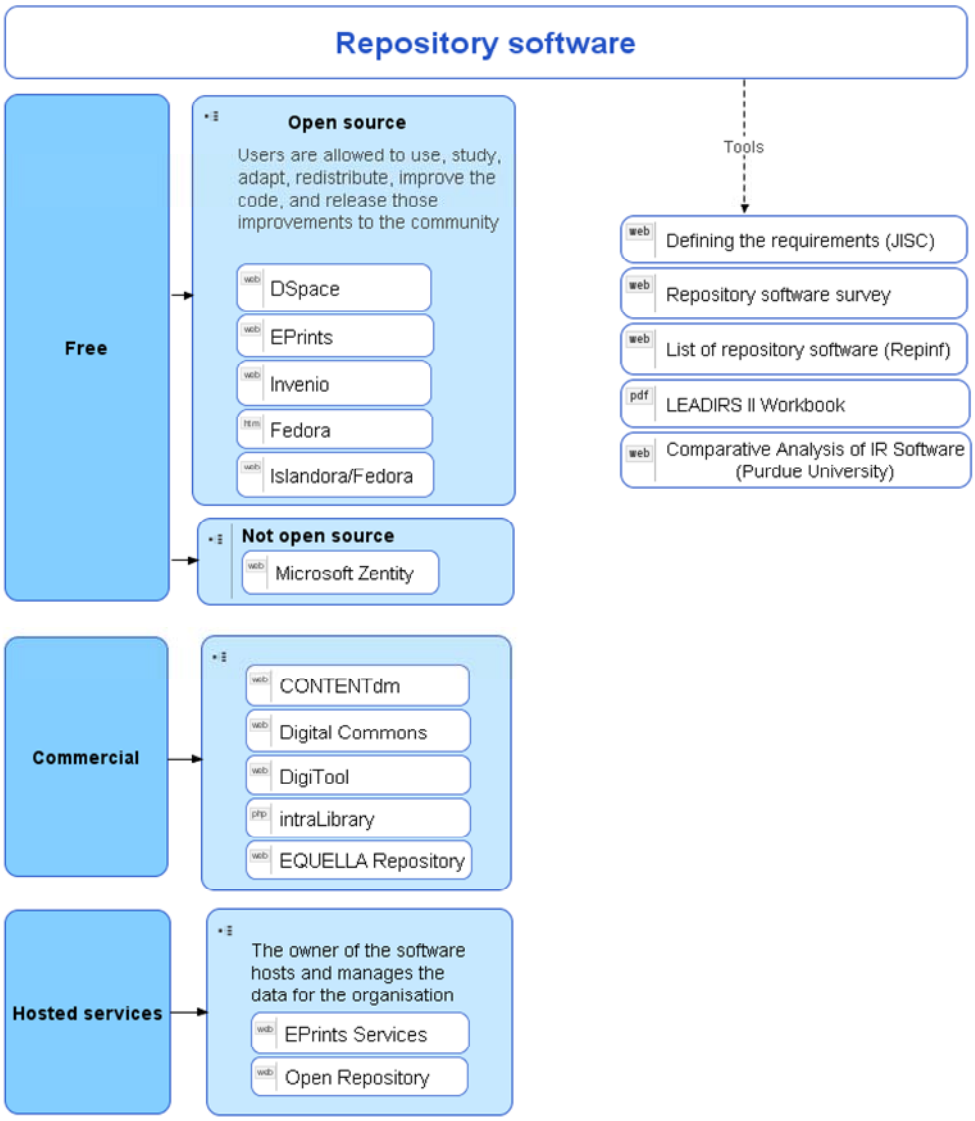


Figure 60. Scheme: repositories software

Software options

Before starting the platforms analysis process and taking into account issues about the implementation costs and maintenance as well as IT staff available, it is important that the organization reflects on the pros and cons of the following options:

- *Free open source software*
  It is a kind of software that is distributed under licenses that ensure that the users always have the freedom to run the program for any purpose, to study how the program works and adapt to their needs, the freedom to redistribute copies of the program to others and the freedom to improve the program and release those improvements to the community.
  This kind of software (i.e., Invenio, DSpace, EPrints, Fedora, Greenstone) is free to download, but usually requires a certain level of expertise to implement and maintain. A

central government body manages the source code, but it is open to changes and improvements in the development community. On the contrary, Zentity from Microsoft is a free platform but not open source.

- *Commercial software*
  You usually have to pay for this software and optionally for any additional subscription or consulting fees. You are owner of the software use and with a subscription you are allowed to make software updates. With a programming interface or API you can customize the software but the software proprietary provides, creates and maintains the source code. Software business solutions for institutional repositories can be expensive. However, there are several advantages of choosing a turnkey system. In general, the time that you need in the beginning is significantly reduced. Most libraries can start loading the content quickly. Commercial providers provide a rapid response for customizations. In general, the commercial solutions provide the hosting space so the hardware costs can be eliminated too.
  Some commercial programs with most implementations are:
  - Blackboard Content System
  - CONTENTdm – DiMeMa, distributed by OCLC
  - Digital Commons – Bepress
  - Digitool – Ex Libris
  - Encompass for Digital Collections - Endeavor
  - Hyperion - Sirsi
- *Software as a service model*
  It means that the owner of the software hosts and manages the organization data. In this model the software seller provides additional services for a fee and also controls the source code updates. Some examples of this model are the platforms EPrints Services and Open Repository.

A complete list of repositories platforms is available on Repinf page (Repository Infrastructure, www.repinf.pbworks.com)

The next step will be the features requirements definition as well as the evaluation criteria definition to allow the comparison of the platforms available.

There are several initiatives that provide a comparative analysis between the different features and characteristics of the repository platforms as well as documents that provide guidance on choosing a repository platform.

Two examples are reported below:

- *Creating an institutional repository: LEADIRS Workbook*
  Manual by Mary R. Barton, Margaret M. Waters and translated by RECOLECTA.
  It is intended to guide those responsible for creating the repository in all matters related to its implementation, management and maintenance.
- *Metalogger*
  Blog by Neil Godfrey
  It offers a personal guide “informal comparison of some institutional repository solutions”, that analyses the following programs: Digital Commons, DigiTool, DSpace, EPrints, Equella, FEZ and Vital.

The Repository Support Project (RSP) conducted a survey (2009) among software repositories providers and compared platforms (CONTENTdm, Digital Commons, DigiTool, DSpace, EPrints, Equella, Fedora, Islandora / Fedora, IntraLibrary, Open Repository, Zentity). They consider the following criteria:

- support;
- types of item supported;
- metadata formats;
- thumbnails;
- user interface functions;
- advanced search;
- display options navigation;
- default subject classifications;
- organization;
- user validation;
- web 2.0;
- statistical reports;
- operating systems;
- databases;
- other specifications;
- machine to machine interoperability;
- administration features;
- services.

The JISC InfoNet System Selection project offers a 5 phases model to help select a platform repository. It is a generic model and as a flexible application. Some of the components identified are fundamental to the approach and others are optional and generally suitable only in a very large scale and costly projects. The model has been used successfully by a number of institutions. The model is developed in "Infokit System Selection" and includes the following information:

- *Project setup*
  - Business case
  - Project Charter/Project Initiation Document
  - Scoping the project
  - Change control
  - Stakeholders
  - Project plan
  - Project stages.
- *Define what you need*
  - General requirements
  - Technical requirements
  - Functional requirements
  - Create the Statement of requirements
  - Prepare an invitation to tender.
- *Initiate procurement*
- *Evaluate suppliers*
  - Shortlisting
  - Evaluation
  - Setting the agenda

  - Preparing test scripts
  - Practicalities
  - Evaluation hints & tips
  - References.

- *Conclude procurement*
  - Decide the preferred supplier
  - Gap analysis
  - Negotiate with suppliers
  - Sign the contract
  - Start your implementation project.

Repository development and management

The success and performance of repositories are related to several factors. Among other things, the planning and definition of strategies and policies related to the following issues are very important:

- advocacy and promotion of the repository with potential content providers (researchers);
- support services (e.g. copyright help service) and value added services (e.g. statistics, lists of publications) for content providers;
- dissemination and repository visibility outside the primary content providers;
- interoperability with other information systems (e.g. CRIS) and integration with the research workflow and environment;
- content, metadata, and preservation policies.

For institutional repositories the most critical factor is the existence of an institutional mandate. Implementing and running a repository involves many actors, resources, processes, and risks.

The planning phase is essential and should address (Figure 61):

1. *Costs*

   As a general guideline, it is best to make a clear case, with clearly identified costs presented up front, and a persuasive and clearly articulated set of strategic benefits that match institutional priorities. A repository is a strategic investment and should be funded accordingly. You need to be able to justify that cost if questioned by university managers. There could be huge variation in start-up costs depending on whether free software is used, the number of staff-days required to set up the system, and which functions are included in the costs (e.g. advocacy). You should also consider the peaks and troughs in costs, that may be due to things such as long-term preservation (i.e. repository costs may not follow a flat trajectory).

   Potential cost components are:

   - human resources (IT personnel, repository manager, etc.)
   - administrative support
   - storage and hardware (and if not open source, software)
   - infrastructure/facilities
   - outreach and promotion
   - user documentation and training
   - miscellaneous: personal travel, personal training, insurance, contingency estimation, etc.

   The costs analysis should result in a sustainability plan.

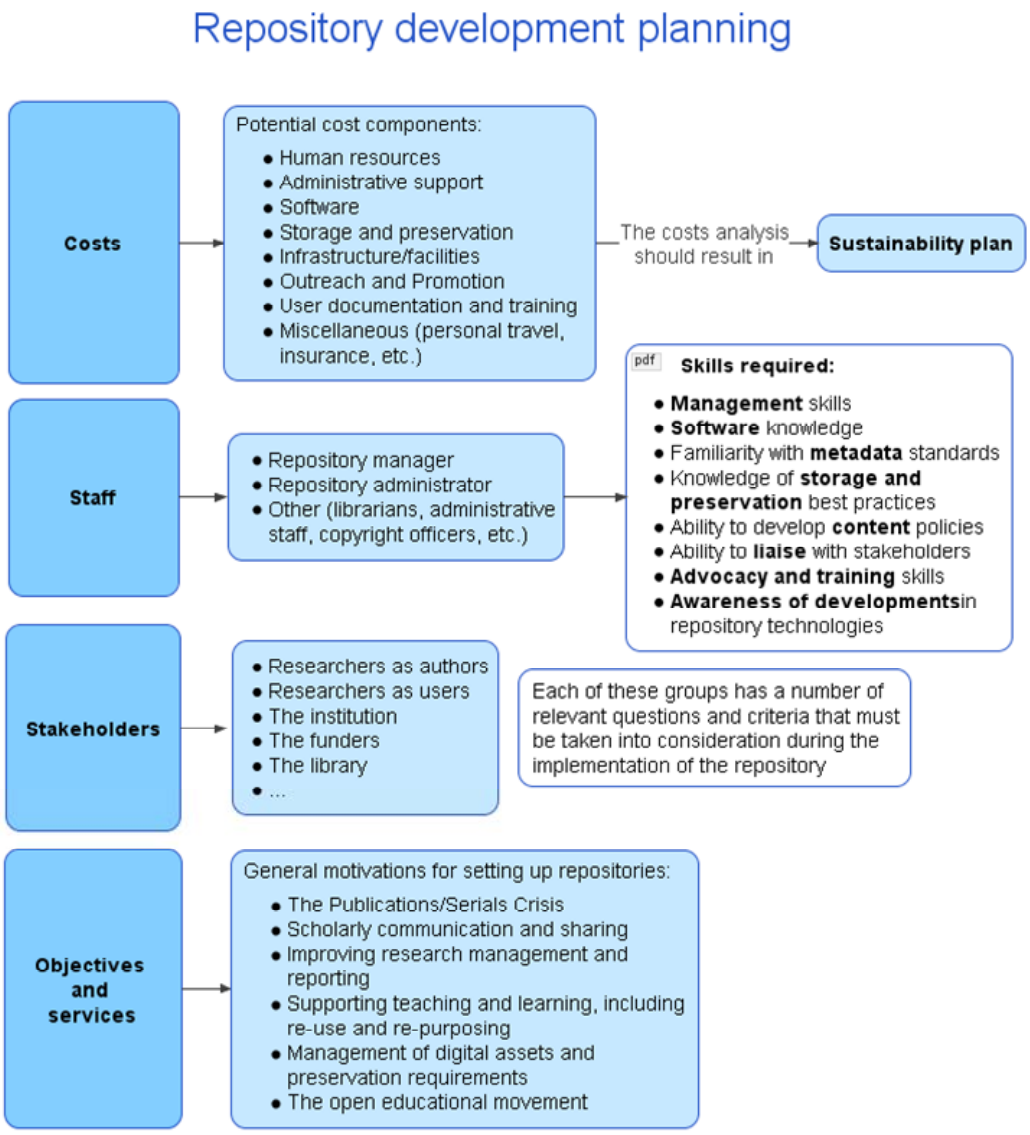


Figure 61. Scheme: repository development planning

2. *Staffing the repository*
   The success of an institutional repository depends largely on the existence of a trained and committed team. Staff requirements for a repository vary greatly between institutions depending on the remit of the repository and on existing and available resources. In some repositories the skills, knowledge and abilities required may be expected of a single repository positions with the assistance of general IT personnel. However, many institutions spread the work over two main positions:

   – *Repository manager*
   manages the 'human' side of the repository including content policies, advocacy, user training and liaison with a wide range of institutional departments and external contacts.

- *Repository administrator*
  manages the technical implementation, customization, repository software, manages metadata fields and quality, and creates usage reports and tracks preservation issues.

As with all jobs, the roles of the Repository manager and administrator will require a certain amount of training, depending on individual experience and qualifications. Other institutions spread the work over several positions or over several departments, typically including: library cataloguers, subject librarians, other library staff, teaching and administrative staff, learning technologists, educational developers, copyright officers, and IT services staff.
The following skills, knowledge and abilities are required to develop and manage a successful repository:

- *Management*
  ability to manage the set-up and development of the repository including strategic and financial planning and liaison with relevant groups and individuals.
- *Software*
  familiarity with relevant web-based systems and repository software along with the ability to implement and modify systems and software to meet the needs of the repository and institution.
- *Metadata*
  familiarity with relevant metadata standards and the ability to monitor and ensure metadata quality is maintained.
- *Storage and preservation*
  awareness of current best practice and the ability to liaise with other departments to ensure storage and preservation procedures meet best practice.
- *Content*
  familiarity with current IPR issues along with the ability to develop content policies and engage with key stakeholders to maximize quality and quantity of content.
- *Liaison*
  ability to liaise with various groups, departments and individuals both within the institution and externally to promote the deposit and use of items in the repository.
- *Advocacy, training and support*
  ability to meet the needs of the repository and its users in terms of advocacy of OA and the repository, training in the deposit and use of the repository and support for users requiring assistance or information.
- *Current awareness and professional development*
  familiarity with current trends in the repository and research community and an awareness of developments in repository software and associated technologies.

3. *Identification of stakeholders and their needs*
   It is crucial to recognize and appreciate the fact that IRs are mainly about the users and the content rather than simply a matter of technology. It is therefore imperative to understand the demand side of institutional repositories. The identification and analysis of requirements, demands and needs of each of the main actors involved in the creation, registration and dissemination of scientific knowledge in the institution provide a useful diagnostic of opportunities and obstacles to the establishment of an institutional repository.
   Some key stakeholders of a repository have been identified:

- researchers as authors;
- researchers as users;
- institution;
- funders;
- library.

Each of these groups has a number of relevant questions and criteria that must be taken into consideration during the implementation of the repository.

Most authors on the creation and implementation of an IR highlight the need to establish a university wide committee that will spearhead the whole process. Many a time, it is assumed that the creation and implementation of an IR is the sole responsibility of librarians within the university. However, it is clear that there is need to involve other stakeholders such as the IT staff as well as the academics and scholars. This committee should engage the university community on the need for an IR, and articulate the primary benefits of creating it – whether it is for published output or all digital items crated during the course of business of the institution.

4. *Objectives and planning services of institutional repository*

   A key step in the planning process is to define the message and motivation for repository development at your particular institution. Motivations for setting up repositories vary depending on communities but include:
   - coping publications/serials crisis
   - improving scholarly communication and sharing
   - improving research management and reporting
   - supporting teaching and learning, including re-use and re-purposing
   - managing digital assets and preservation requirements
   - considering the priorities of the open educational movement.

Subjects for discussion

- What is an IR and what it means for you?
- Have you described and documented the purpose and the factors that have driven the establishment of IR at your institution?
- Who are the main stakeholders?
- Have you thought how you will position your IR within the wider information environment?
- What are the goals of your repository?
- Are IRs free?
- What are the priority services?
- What are the short-and long-term benefits?

Repository implementation

Once the development planning process has been completed, a plan for repository implementation shall start (Figure 62).

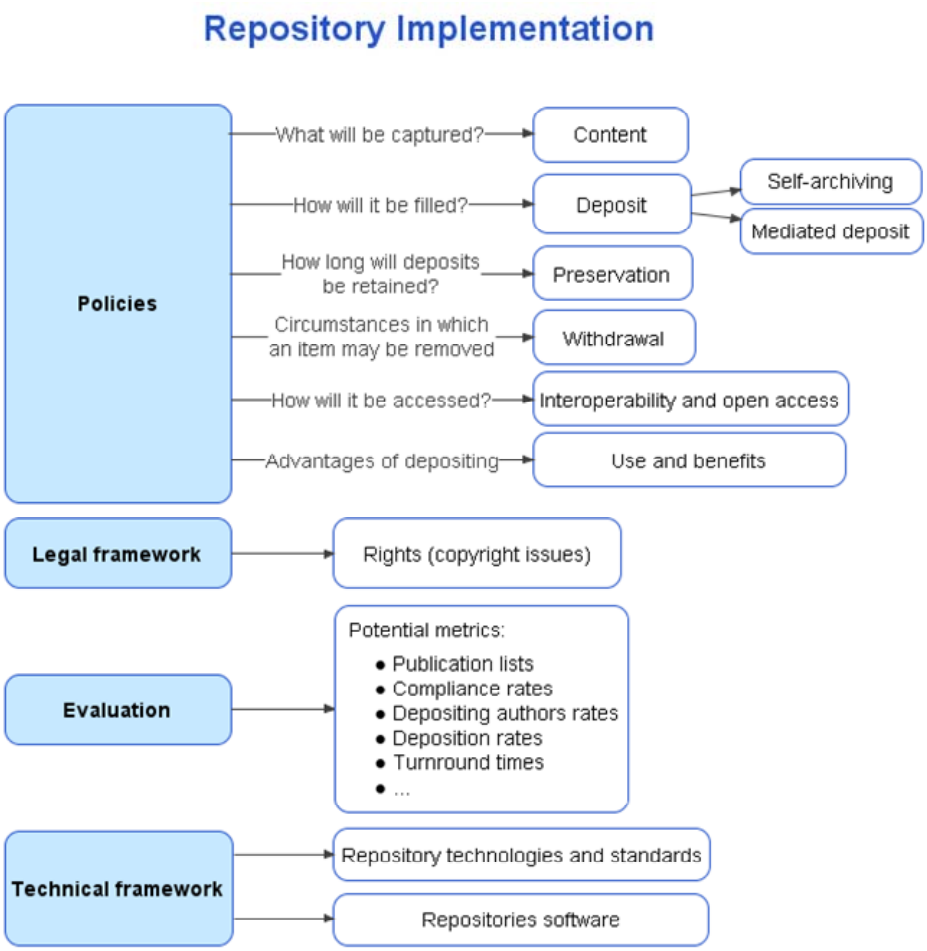


Figure 62. Scheme: repository implementation

The following issues should be taken under consideration:

1. *Policies*
   In order to ensure that IR uptake and use is achieved, there are certain policy considerations that must be made. Clearly, a policy is crucial in setting the parameters of the system; policies must take into account stakeholder needs, and existing research practices.
   Policy issues that should govern the implementation of IRs include:

   - *Content policy* (it states what content will be captured in the repository)
     Different institutions have different content policies which may state that they accept only published materials, theses and dissertations, or even unpublished material. Institutions will identify the elements that qualify output to be deposited, examples include: work produced by, contributed by, sponsored by, or in association with a faculty, centre, school or department; output must be produced by a member of the community; the work must be complete and ready for distribution prior to submission.
     Issues to consider:
     - Will the repository focus on a specific discipline, or will it reflect the entire academic output?
     - What types of materials are sought?

- What metadata must be collected?
- What versions are acceptable?
- Should peer or quality reviews be implemented?

– *Submission or deposit policy* (it states the processes to be undertaken during submission of the output and also states whether submission shall be directly by the authors (self-archiving) or shall be mediated by designated individuals)
The processes include quality assurance issues where only items that have undergone some form of refereeing within the institution will be accepted. Submission also states that authors should check copyright status before depositing their output.
Issues to consider:
  - Who can deposit?
  - What type of materials can they deposit and in what format?
  - Are there any policies relating to content packaging?
  - What level of moderation is required for checking deposits, for example:
    - At what stage is IPR checked to ensure legality of deposited content and who does this (this is particularly relevant to the use of third party content in learning and teaching materials)
    - Are any quality checks included (in relation to formats such as sound quality, or in relation to pedagogic quality) and who does this. It may be that existing quality processes are felt to be sufficient.

– *Preservation policy* (it indicates how long content will be retained in the IR)
Some institutions provide a fixed term such as 10 years, and others will retain content in the IR in perpetuity. This means that migration to new formats will be carried out; software emulations will be provided to access materials that could not be migrated.
Issues to consider:
  - For how long will the repository aim to preserve deposits?
  - Can this be guaranteed?
  - What formats should be used for preservation purposes?
  - How will learning and teaching materials be updated - particularly when content becomes obsolete or incorrect

– *Usage policy*
Issues to consider:
  - What can end-users and services do with repository metadata and content?
  - How should publishers' restrictions or embargoes be managed?
  - At what level should usage be permitted, e.g. on an item by item level?
  - Is there a take-down policy to respond to copyright or other infringement?

– *Withdrawal policy* (it outlines the circumstances in which an item may be withdrawn)
These include instances in which there is doubt about the originality of the output due to plagiarism, copyright infringement, falsification of research results, etc.

The OpenDOAR policies tool is a simple way for repository administrators to formulate and/or present their repository's policies. It provides a series of check boxes and pick lists for all key policy options.

2. *Legal framework*
See Authors' rights (p. 79)

3. *Evaluation*
Assessments may be useful from various points of view to:

- evaluate the quality of work deposited in the repository
- monitor the progress / success of the repository
- certify the "quality" of the repositories
- benchmarking or compare the institution's repository with other repositories

It is important to consider:

- how do customers see us? (customer perspective)
- what must we excel at? (internal perspective)
- how do we look for shareholders? (financial perspective)
- can we continue to improve and create value? (innovation and learning perspective)

Here follows a list of metrics for evaluation of IRs:

- *Guidelines*
  - *Guía para la evaluación de repositorios institucionales de investigación* (REBIUN-FECYT-RECOLECTA)
  - *OpenAIRE guidelines* addressed to repository managers to define and implement local data management policies in compliance with the OA demands of the European Commission.
  - *Driver guidelines,* a best practice tool for the repository community, and to streamline repository developments across Europe. They basically focus is on five issues: collections, metadata, implementation of OAI-PMH, best practices and vocabularies and semantics.
- *Certificate*
  - *Certificado DINI* (Deutsche Initiative für Netzwerkinformation/German Initiative for Network Information) for the general configuration of a repository, describing the minimum mandatory criteria and additional recommendations that should be considered when setting up and running a repository. In granting a certificate, DINI helps with quality control and serves as a tool for repository evaluation and improvement. It examines whether appropriate technical standards are in use (server, interface, formats, metadata, etc.) and whether best practices are adopted by support services (policies, support to authors, indexing, archiving, etc.).
- *Ranking*
  - *Ranking web of world repositories* to support OA initiatives and therefore the free access to scientific publications in an electronic form and other academic material. Web indicators are used to measure the global visibility and impact repositories.
- *Other metrics*
  - *Repository Manager Support - Measuring success,* produced by the Repository Support Project (RSP), containing a number of possible ways of measuring success of the day-to-day repository's activities. These metrics can be used to set certain targets for the development of the repository. Some of these potential metrics include:
    - Publication lists
    - Compliance rate
    - Counting authors
    - Deposition rates
    - Turnaround times.

4. *Technical framework*:
   See *Repository technologies and standards* (p. 114) and *Repositories software* (p. 119)

Subjects for discussion

- What content do you want to host in your repository? May it include scientific data, theses, and learning resources?
- Who are the main users?
- Taking into account the type of content in your IR, have you consulted the academic community in order to explore current practice and method of dealing with these materials?
- Who can contribute content, faculty, staff, students and others?
- Who owns the content once posted on the IR?
- Does the repository accept peer-reviewed content only or also content not revised?
- Who is responsible for ensuring compliance with copyright of the publisher?
- In the institution, who owns the intellectual property rights for research in universities, course materials etc.?
- Will there be limited access to certain items?
- What impact will the development of the repository have on the current library staff ?
- Do we have enough staff?
- Can we recruit new staff?

Repository promotion and advocacy

Embedding a repository successfully as part of the institution requires significant cultural change, including integration within workflows of deposition and operational procedures. Promotion is one of the most powerful tools to achieve this. It is of key importance to remember that promotion must be a sustained ongoing effort. This should be budgeted for accordingly, both in terms of financial and staff resources (Figure 63).

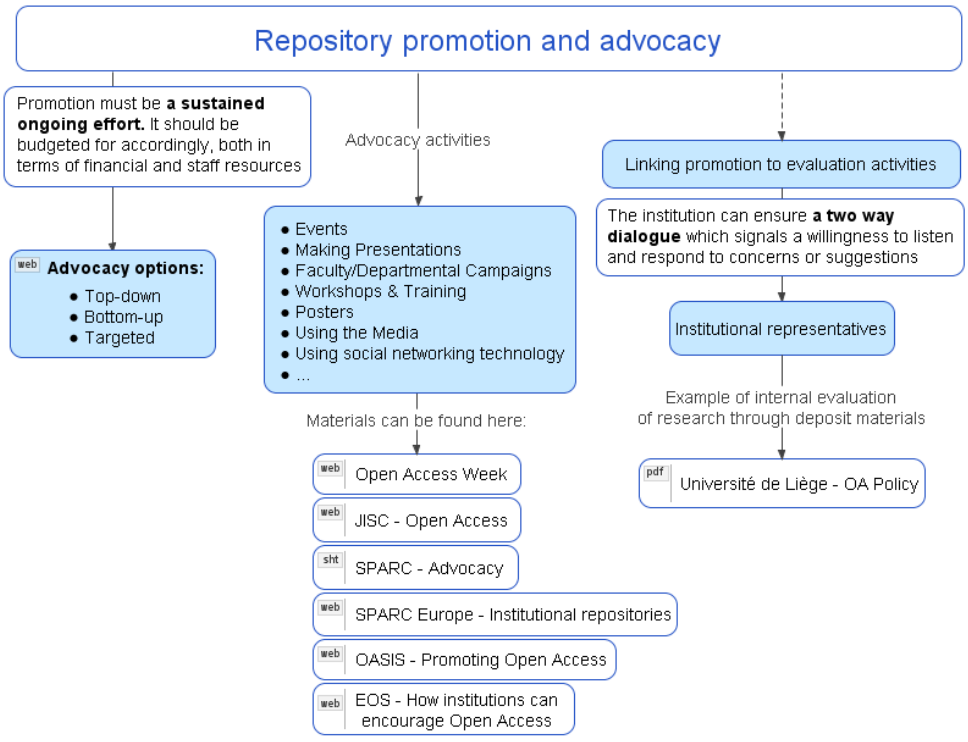


Figure 63. Scheme: repository promotion and advocacy

A number of different advocacy strategies can be used, including top-down and bottom-up approaches, alongside blanket and targeted activities.

Some advocacy activities are listed below:

- events
- presentations
- faculty/departmental campaigns
- workshops and training
- posters
- media
- social networks.

Do not be afraid of repeating and reiterating advocacy actions in support of OA. Find new contexts for and continually adapt your message.

Ultimately the target being aimed for is to give institutional repositories the same weight as other academic activities and priorities (e.g. examinations and applying for grants). Linking promotion to evaluation activities within the institution can ensure a two way dialogue which signals a willingness to listen and respond to concerns or suggestions.

Subjects for discussion

- Which are the specific key benefits to OA and self-archiving to target groups?
- What concerns each group may have with OA and self-archiving?
- What particular aspects of OA and self-archiving must be communicated to each group in order for them to understand and participate in the OA arena?
- Which stakeholder group(s) is to be targeted? How much does this particular group know already about the subject area? What are the gaps in their knowledge?
- What are their particular attitudes towards OA and self-archiving?
- What do you want them to know and why?
- Which is the best strategy: top-down or bottom-up? blanket or targeted?
- Who are the main actors of advocacy messages?

Service providers (repositories)

Service providers harvest information from data providers (repositories), and process these data to provide value-added services that the data providers do not provide themselves. The basic premise underlying OA repository service providers is that there is a distinction between the storage and preservation of information resources in data providers on the one hand, and the ways that users might want to discover and access that information on the other. 'Search' constitutes the most obvious type of service an end-user will require, with metasearch services across subject disciplines being increasingly common. Search is carried out through the interoperability of repositories worldwide, which in turn, is guaranteed via OAI-PMH, which ensures the ability of common services to be built across general sites independent from one another. Some service providers aggregate text-mining services, which can potentially be overlaid on repositories. An example would be searching documents for the expanded forms of commonly-used scientific acronyms. Finally, OA IRs also provide a set of value-added services to their host institution, as well as providing basic services of storage and preservation of the institution's research output.

The basic premise underlying OA repository service providers is that there is a fundamental distinction between the storage and preservation of information resources in repositories on the one hand, and the way that users might need to access that information on the other. That is, for

the end-user, it makes little difference if the information sought is stored in a subject repository, an institutional repository or in an OA journal or collection of such journals. The Service provider effectively provides a "bird's eye view" of all repositories to help users retrieve the relevant OA information resource they seek (Figure 64).

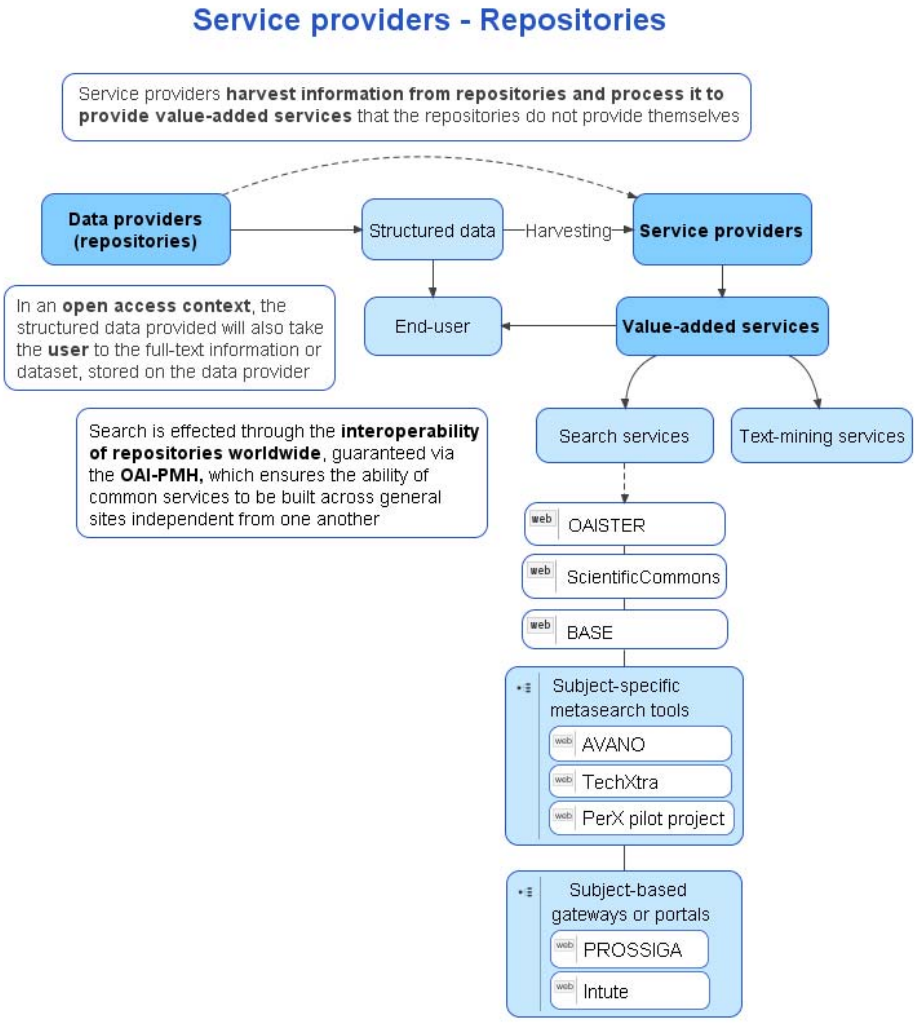


Figure 64. Scheme: service providers and repositories

Services

Repositories can provide the following services:

- *Search service*
  Search constitutes the most obvious type of service an end-user will require. More often than not, search will not be carried out at the actual repository interface, but through a service provider, which issues OAI-PMH requests to data providers, so in effect, the service provider harvests the metadata exposed by many data providers. In this sense, the

service provider provides a metasearch tool, searching across repositories, and so subject-specific metasearch tools have emerged. For example, the PerX pilot project set itself up as a subject specific engineering repository search tool, searching across relevant repositories to discover resources in this area only. From that, TechXtra emerged, which "cross-searches 31 engineering, mathematics, and computing journal collections from over 50 publishers and providers". Likewise, AVANO provides access to electronic resources mainly in marine and aquatic sciences.
A list of service providers that search OAI-compliant repositories using metadata through the OAI-PMH standard is available at www.openarchives.org/service/listproviders.html.
Service providers can then use the metadata harvested as a basis for building value-added services. Subject-based gateways or portals are a case in point: they provide services that search across repositories in accordance with a subject-specification filter and then aggregate the findings in the gateway.
Most service providers today move beyond merely providing a search service, or searches limited to the metadata describing each item. More powerful search engines (like Google) search and index full-text and not only metadata, so more detailed, filtered and personalised searches are possible and becoming the norm. Google Scholar is increasingly becoming a viable service to access academic content, and it seems that in the results returned by Google Scholar, the OA versions of papers are prioritised in order over toll-access versions.

- *Text-mining*
  Some service providers aggregate text-mining services, which can potentially be overlaid on repositories. For example, The National Centre for Text Mining (NaCTeM) which focuses on developing text mining solutions for the academic community, using natural language processing tools, in order to, inter alia, search documents for expanded forms of acronyms. For example, in PubMed, it is possible to retrieve over 5500 documents for the search term "JNK", but with the use of AcroMine developed at NaCTeM, about 4000 documents for the expansion of the acronym, c-jun N-terminal kinase.

- *Internal, institutional service*
  OA IRs also provide services to their host institution (usually, a university). They can be used to promote the institution's visibility (see, for example, the ranking web of world universities, that ranks universities according to their visibility on the web), thus contributing to the marketing of the university's research and post-grad programmes; and used for generating statistics for, for example, research assessment exercises and professional promotion.
  The repository also provides the services of storage and preservation to the host institution, where preservation means "the act of physically and intellectually protecting and technically stabilizing the transmission of the content and context of electronic records across space and time, in order to produce copies of those records that people can reasonably judge to be authentic". Preservation in itself implies a whole set of other services such as format migration, back-ups and disaster recovery, security, preservation strategy, technology preservation and records management.

Subjects for discussion

- What is the underlying model of service provision in relation to data provision?
- What is the qualitative differential between data provision and service provision?
- What are some examples of services provided to end-users searching across repositories?
- What are some important services that repositories can provide to their host institution that could constitute valid arguments in favour of implementing an institutional repository?

Self-archiving

When the author deposits an article in a repository, it is generally known as self-archiving, and when there is a representative of the author(s) that deposits on their behalf, in that case it is called mediated deposit (Figure 65).

Self-archiving or deposit of digital objects in OA repositories, corresponding to the scholarly and scientific outputs of an institution or scientific community, is the green route to OA as envisaged by the BOAI. Every repository has its own self-archiving policies defining who can deposit, what can be deposited (articles, theses, books, data, video, presentations, learning objects, etc.), copyright matters and the type of license that the material hosted by the repository falls under. In addition to the digital copy of the deposited material, metadata are also submitted. Dublin Core is the unqualified metadata format that should be used by repositories in order to conform the protocol OAI-PMH.

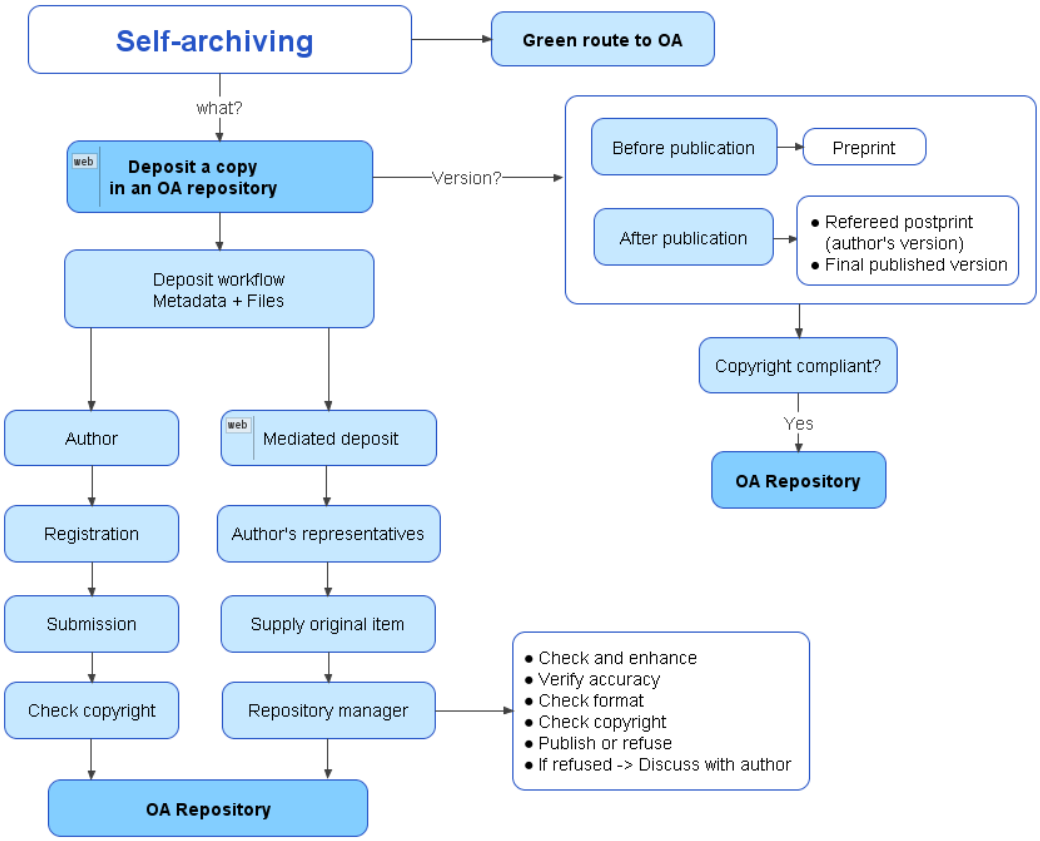


Figure 65. Scheme: self-archiving

Deposited versions of accepted or published articles have to comply with publisher's copyright agreements and publication licences. Unrefereed versions, however, are not subject to the copyright law, therefore they can always be deposited together with a list of corrections with modifications introduced after the peer review process.

There are journals that allow self-archiving of all possible papers versions, and others that restrict it to only one, with the condition of indicating always the primary source where the

article has been published. The self-archiving policy of the journal with respect to the usage rights (see *Author's rights*, p. 81) can be checked directly on publishers' websites or on existing directories, such as SHERPA-ROMEO or DULCINEA.

Self-archiving may be a requirement set by academic/research institutions or funders; in this case authors or grantees must take into account the terms of these institutional policies in order to ensure compliance.

OA mandates (see MELIBEA, ROARMAP, SHERPA-JULIET) usually indicate the version of the work to be deposited, where to deposit information on copyright, and a timeline for when it should be deposited (immediately upon acceptance, after publication or after an allowed temporary embargo).

Subjects for discussion

- What factors should be considered before depositing an accepted or published paper in a repository?
- What factors should be considered in the implementation of a policy for archiving in an OA repository?

Coexistence of journals and repositories

Is there competition between journals and repositories? Can they coexist and offer different services to the scientific community and society in general? So far there has not been evidence that repositories undermine the existence of journals using current models.

While peer reviewed journals still play a unique role in the quality evaluation of published material, the roles of dissemination and preservation are shared with new and emerging services, such as digital repositories. Institutional and subject based OA repositories take the challenge to meet these demands, and meet them well.

Repositories are complex digital systems for the management, access, and preservation of digital objects, but they can also offer additional services on top of the content they hold. If we want to focus on the relationship between institutional repositories and scientific journals, we can analyse their interaction using existing models, in which files flow from repositories to journals and vice versa.

The publication of scientific outputs in an OA journal or the deposit in a repository are both well known routes to achieve OA. Although they look like two separate and parallel paths, they are not. Technology now allows to establish links between these two modes to simplify the deposit workflow. In order to analyze this interaction, Stephen Pinfield's models (2009) were followed. He proposed three models to visualize the interaction between journals and repositories, depending on the direction of flow, from the repositories to the journals or vice versa:

- *Model 1: repository → journal*
  It refers to the situation when a pre-print is deposited into a repository (e.g. arXiv) and is subsequently submitted to a journal for publication. While the publication carries out its evaluation process, the pre-print version continues to be available through the repository. Once evaluated, authors may deposit the corrected version, either their own version, or that which was published by the publisher (depending on copyright policy). This may lead to the duplication of files, but in the repository different versions can be clearly identified. If the journal applies the concept of "Lots Of Copies Keep Stuff Safe" (LOCKSS), the copies deposited not only serve as secure copies, but also work to improve impact and visibility within the scientific community.

- *Model 2: journal → repository*
  This model is possible if the journal is either fully or partially OA or allows some forms of self-archiving. Two modes are proposed: 1) the author deposits pre- or post-print in the repository; 2) the publisher deposits published papers in the repository either during publication or after an embargo period.
  This model is often followed by biomedical journals, due to requirements imposed by funding agencies. These agencies require that published works derived from the full or partial funding of research projects be deposited in PubMed Central. For example, the National Institutes of Health (NIH) require the deposit in this thematic repository as soon as possible and no later than 12 months of publication. With this purpose, and in order to facilitate the management, NIH has created the manuscript submission system where publishers and authors can register and then submit files to PubMed Central. A similar system has been created for the deposit of works into UKPMC (UK PubMed Central) for authors receiving funding from participating organizations.
- *Model 3: repository → overlay journal*
  Overlay journals are created using files deposited in repositories: selected papers are peer reviewed and articles are managed and published in a method similar to traditional journals, but the content continues to be held only by the repository. This system was the goal of the project RIOJA (Repository Interface to Journal Archives), funded by JISC, which ended in 2008. The project created a file transfer system (API) between arXiv and a journal management system, such as OJS, using the SWORD protocol. This system can also be used with a repository created with GNU-Eprints.

Table 7 summarises the journal and repository functions of scientific communication for the models described. In all cases, the certification remains with the journal and either the journal or the repository performs the other functions, despite preservation being a feature that is inherently embedded in digital repositories.

Table 7. Journal and repository functions according to Pinfield's models

Function	Model 1		Model 2a		Model 2b		Model 3	
	J	**R**	**J**	**R**	**J**	**R**	**J**	**R**
Registration	X	X	X		X			X
Certification	X		X		X		X	
Dissemination	X	X		X	X	X	X	X
Preservation	X	X		X		X		X

J: Journal; **R**: Repository

Coexistence seen by librarians and authors

There are studies that analyze both the coexistence of and competition between repositories and journals, drawn from surveys of informational professionals and researchers/academics. These studies have shown that both journals and repositories can coexist, as there are a variety of roles that do not overlap, but instead complement each other.

In 2006, the Publishing Research Consortium published the results of a survey of 424 librarians. This survey questioned librarians on what factors they considered important when purchasing a publication, and how OA and institutional or subject repositories affected their decision making. The quality, cost, and immediacy of access to the information were the most valued. As to whether

institutional repositories will endanger the existence of journals, there does not currently seem to be a conclusive answer. The added value of editorial copyediting and hypertext reference systems seems small when comparing the author's corrected version and the published version, with the pre-print version (before peer-review) and the publisher's final version.

An example that illustrates that repositories have not undermined journal use can be seen in the field of astronomy, where researchers typically self-archive their work in arXiv before publication. These papers were usually deposited in arXiv before publication (pre-print version). The results showed that there was an average period of approximately 4 months between the deposit and the publication, and after that period it was the published version that was preferred. Nevertheless, the corrected and accepted version was the most accessed. It seems that self-archiving does not threaten the existence of journals. Deposit in arXiv actually improves journal visibility and impact of the work. Journals that were included in OA portals, such as Redalyc, DOAJ, and SciELO, also had increased visibility and position within the scientific community.

A case study: the National Library of Medicine

The National Library of Medicine (NLM) is the largest USA medical library. It raises funds and provides information and services research in the areas of biomedicine and health care.

In 2007 an 18-month project was conducted to evaluate, test and recommend digital repository software and systems to support collection and preservation of a wide variety of digital objects. A working group was created and charged with the task of preparing the functional requirements of a digital repository for the NLM to provide access and preservation of digital content not covered by PubMedCentral and NIH CIT Videocast project. The creation of functional requirements and identification of key policy issues for NLM digital repository were the first essential steps to help building the collection of NLM in the digital environment. The results of the project were three documents that defined the functional requirements specification for a digital repository of the NLM:

- *Digital Repository Working Group (DRWG) project charter*;
- *NLM policies and functional requirements specification*;
- *Requirements for an NLM digital repository: report and recommendations*.

Subsequently a new group was created for the evaluation and selection of the repository platform, whose mission was to evaluate commercial systems and open source and select one (or a combination of systems and software) for use as a digital repository at the NLM.

Based on the work of the group of functional requirements specification, the evaluation team scanned the landscape of platforms repositories and conducted research to develop a list of 10 systems for initial assessment. The 10 systems are:

- *open source*: DAITSS, DSpace, EPrints, Fedora, Greenstone, Keystone DLS;
- *commercial*: ArchivalWare, CONTENTdm, DigiTool, VITAL.

The NLM group then developed a set of master evaluation criteria in order to shortlist the systems:

- *Functionality*
  Degree of satisfaction of the requirements enumerated in the NLM Digital Repository Functional Requirements Specification OR
- *Scalability*
  Ability for the repository to scale to manage large collections of digital objects.
- *Extensibility*
  Ability to integrate external tools with the repository to extend the functionality of the repository, via provided software interfaces (APIs), or by modifying the code-base (open source software).

- *Interoperability*
  Ability for the repository to interoperate with other repositories (both within NLM and outside NLM) and with the NLM ILS.
- *Ease of deployment*
  Simplicity of hardware and software platform requirements; simplicity of installation; ease of integration with other needed software.
- *System security*
  How well does the system meet HHS/NIH/NLM security requirements?
- *System performance*
  How well the system performs overall; response time (accomplished via load testing). System availability (24x7 both internally and externally?).
- *Physical environment*
  Ability for multiple instances for offsite recovery; ability to function with the NIH off-site backup facility (NCCS); ability for components to reside at different physical locations; ability for development, testing and production environments; capability for disaster recovery.
- *Platform support*
  Operating system and database requirements. Are these already supported by OCCS? Is there staff expertise to deal with required infrastructure?
- *Demonstrated successful deployments*
  Relative number of satisfied users (organizations).
- *System support*
  Quality of documentation, and responsiveness of support staff or developer/user community (open source) to assist with problems.
- *Strength of development community*
  Reliability and support track record of the company providing the software; or size, productivity, and cohesion of the open source developer community.
- *Stability of development organization*
  Viability of the company providing the software; or stability of the funding sources and organizations developing open source software.
- *Strength of technology roadmap for the future*
  Technology roadmap that defines a system evolution path incorporating innovations and "next practices" that are likely to deliver value.

All systems selected were classified according to these criteria and three of them were identified for further consideration and deeper analysis: DigiTool, DSpace and Fedora.

For more in-depth evaluation of these three systems a Test Plan was created based on the requirements listed in specification of functional requirements for the NLM repository and formed 4 groups (access, metadata and standards, preservation and workflows, technical infrastructure) to assess specific aspects of each system.

The methodology and test results are detailed in the report "Recommendations on NLM Digital Repository Software".

After completion of all tests, the working group recommended that the NLM select Fedora as the base system NLM digital repository. The working group was very impressed with a number of Fedora capabilities, including powerful roadmap technology, the excellent underlying data model that can handle various NLM materials, the active development community, compliance Fedora standards and the use of Fedora by major institutions and libraries with similar digital project objectives. Fedora is also seen as a low-risk option, since it is an open source, royalty-free license.

M3. OA journals

Journals vary widely in regards to the access they provide, the publication licenses they present to authors, and the copyright agreements they expect authors to sign. Journals range from those whose access is restricted by subscription and copyright is transferred exclusively to the publisher (no OA criteria are met) to those that are free to access and copyright is maintained by the author (all OA criteria are met).

Focusing on the journals that meet all or part of the definition of OA, according to the Berlin Declaration, they can be classified into the models reported in Figure 66.

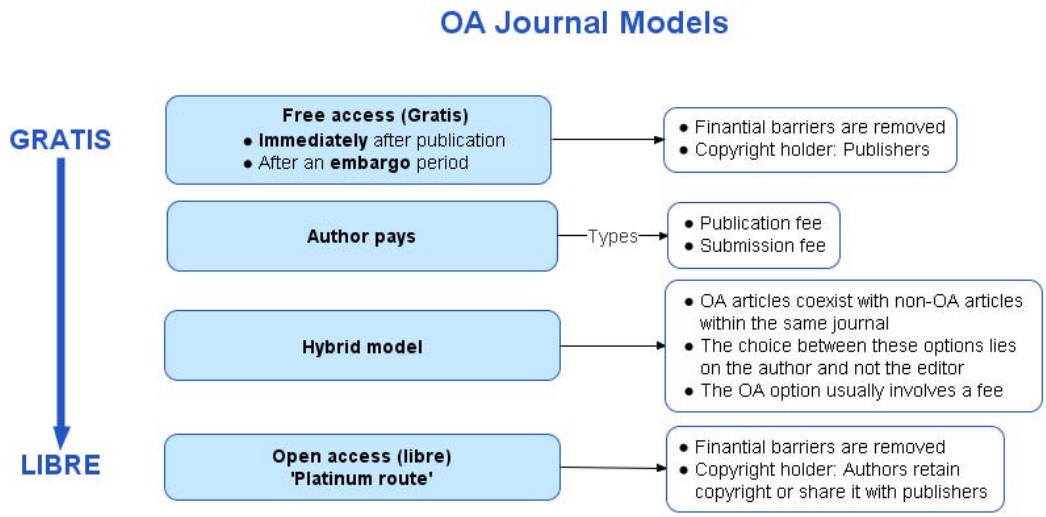


Figure 66. Scheme: OA journal models

The possible OA journal models are:

1. *Subscription model providing free online access*
   Journals based on a subscription model provide access to the digital version either with or without an embargo period (generally from 6 to 12 months).
   This model is not a real OA model but it is important to mention it because the number of journals that allow full or partial access to their content is increasing. When a journal allows free access to all of its content, the difference between it and an OA journal is the copyright. In this case we use the term free access instead of OA. For these publishers, the embargo represents a compromise between OA and the subscription model. The embargo guarantees the sustainability of the journal and by allowing delayed free access they attempt to reinvest the profits in the promotion of knowledge. Important resources allowing to locate journals with full or partial access to their texts are PubMed Central and HighWire Press. Examples of journals in health science are *Cardiovascular Research* (12 months embargo) and *Genome Research* (6 months embargo).

2. *Author-pays model*
   It refers to pay-per-publication OA journals, where authors retain all or part of copyright and pay for the publication of their articles.

This name creates some controversy, as some people object to the use of "author pays" because in many cases it is not actually the author that has to pay the publication fee, but instead it is the institution, the library, the funding agency, or the sponsor. In addition, authors may object to this model because the name implies that they will have to bear the cost. Still, some authors are used to making some payments as under the traditional system authors often have to pay certain fees associated with publication (page and colour charges, etc.). The author payment system has been adopted by both commercial publishers and non-profit organization. This model has received criticism because some believe it allows for publication based on economic capacity rather than merit, and it does not seem suitable for areas with little funding, such as social sciences and humanities. Yet, most author-pays journals provide discounted payment rates for authors with little resources, although it is unclear what is needed to meet these criteria.
Examples of journals in health science are included in BioMed Central, the Public Library of Science (PLoS) and Hindawi Publishing Corporation.

3. *Hybrid model*
This model refers to paid subscription journals with optional OA; in fact, two forms of publication coexist: a classical form in which access to articles is restricted to subscribers, and another in which authors pay a fee to make their article freely available on the Internet. The cost to make one article OA through a hybrid journal varies considerably by publisher, but in the case of commercial publishers it is around $3000 (e.g. Sponsored Article from Elsevier, Oxford Open from Oxford University Press, or Open Choice from Springer). Using this model, publishers do not run many risks. They continue to charge for subscription, but also charge for individual articles to be made OA. As publishers seem to be charging twice for the same materials, some have termed this as "double-dipping". One of the first publishers that used this model was Springer, with its Open Choice. Other publishers soon followed. See examples in Table 8.

Table 8. Publishers adopting hybrid model journals and system of payment

Publisher	Author payment system
American Chemical Society	ACS AuthorChoice
American Physical Society	Free to read
BMJ Publishing Group Ltd	BMJ unlocked
Cambridge University Press	Cambridge Open Option
Elsevier	Author pays
HighWire Press	Author-side payment
John Wiley & Sons	Online Open
National Academy of Sciences	Open Access Option
Oxford University Press	Oxford Open
Royal Society	EXIS Open Choice
Royal Society of Chemistry	RSC Open Science
Springer	Open Choice
Taylor & Francis	Open Select

Examples of journals in health science are *European Journal of Public Health* and *Health Policy and Planning*, *International Journal of Cancer.*

4. *Platinum route model*
It refers to free OA publishing and represents the most desirable situation in the OA context. OA journals are free to the authors and readers. The rights allow reuse and self-

archiving of the work. In these journals the authors retain the copyright or share it with the publishers.
An example is *Open Medicine*, a journal founded in April 2007. Its revenue comes from partners, donations, and occasionally from non-commercial sponsors. They reject any contribution from the pharmaceutical industry, in exchange for an editorial independence that allows free discussion and ideas exchange. Other examples are included in the DOAJ.

Online management systems

See *Online management systems* in M2. Scientific journals (pag. 62).

Economic models to OA journals

Publishers considering OA for their publications must develop a business model that supports distribution in this format (Figure 67).

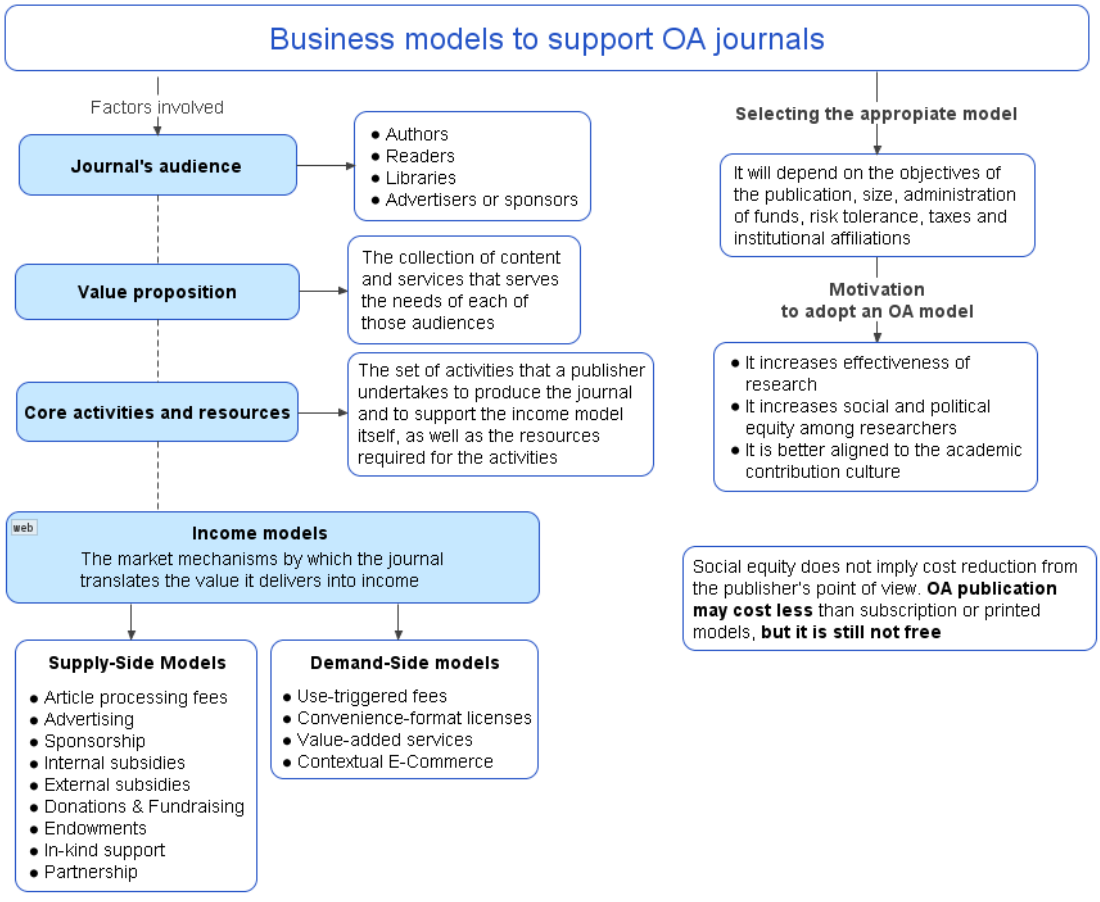


Figure 67. Scheme: economic models to OA journals

Selecting the appropriate model will depend on the publication objectives, size, administration of funds, risk tolerance, taxes, etc. Publishers might adopt an OA model in order to: increase access to publications, eliminating access barriers to contents; maximize the scope, support the launch of new journals when the market would not support a subscription model; implement a model in response to funder-mandated content deposit policies. The arguments that a publisher might adopt to support OA, include that OA increases the effectiveness of the scientific, socio-scientific and humanistic research, increases the social and political equity among researchers in the two hemispheres, is better aligned to the academic contribution culture.

The worldwide number of OA academic journals has grown in the past years. According to the Directory of Open Access Journals (DOAJ) there are almost 8000 OA journals (in August 2012) in all fields of knowledge, and every year new journals are added.

OA journals promote increased efficiency, effectiveness and equity on the dissemination of research outcomes, resulting in both, social and economic benefits. However, social equity does not imply in cost reduction from the publisher's point of view. OA publication may cost less than subscription or printed models, but it is still not free.

The main income models capable of sustaining OA to scholarly publication are listed below:

1. *Article processing fees*
   Examples in health and related disciplines:
   BioMed Central
   Journal of Medical Internet Research
   Public Library of Science.
   Examples of publishers with paid options for OA:
   British Medical Journal Publishing
   Royal Society of Medicine
   Society for Endocrinology
2. *Advertising*
   Examples in health and related disciplines:
   BioMed Central
   Priory Medical Journals
   Journal of Medical Internet Research
   Neurology, Clinical Neurophysiology and Neuroscience
3. *Sponsorship*
4. *Internal subsidies*
5. *External subsidies*
   Foundation grant examples:
   Journal of Neglected Tropical Diseases
   Filariasis.net
   Government funding examples:
   Emerging Infectious Diseases
   Environmental Health Perspectives
6. *Donations and fund raising*
   Examples in health and related disciplines:
   Journal of Medical Internet Research
   Neurology, Clinical Neurophysiology and Neuroscience
   Public Library of Science

7. *Endowments*
8. *In-kind support*
9. *Partnership*

According to the OA advocate Subbiah Arunachalam, "international action is one thing, but genuine free access is another. It will need a champion (or champions) in every institution to promote the creation of institutional archives, and persuade scientists [and scholars] to place their papers in them".

Subjects for discussion

- What kind of economic model would you suggest to a new journal created by a non profit organization?
- Which are the most usual income models which support OA journals?

Service providers (OA journals)

The underlying structure of OA service provision is that there is information exchange between data providers on the one hand, and service providers on the other, the latter providing a value-added service to the end-user (Figure 68).

For journals, this added service can typically be adapted interfaces, thesauri, or the emission of proactive tables of contents aligned to personal interest profiles, and all of these services can and are provided in an OA journal context. OA journal service providers also offer the same publication services as non-OA journals service providers, namely distribution of content and peer review, as well as all typesetting, copyediting, translating, layout and marketing services intrinsic to the production of a high quality journal. All of these activities are precisely the same for OA journals as they are for toll-access. Where OA service providers are beginning to make a qualitative difference is in the production of "overlay" journals, by which existing previously unpublished papers deposited in repositories would be peer-reviewed by experts in a given area, receive are 'quality-stamped' in some way to indicate to users that the work had undergone peer-review. The overlay journal structure does not store the documents or data to which they refer, but points to where these sources are stored. These sources can also include the underlying data sets used to generate the research outcome on which the paper is based. OA journal service providers also provide the reference and citation linking customary to toll-access service providers.

Researchers are particularly affected by information overload, as it is a *sine qua non* of their profession that they keep abreast of new publications, journal articles, books, chapters. Value-added services provided by journal service providers today need to go beyond merely providing search aids, like thesauri and other controlled vocabulary tools, or adapted interfaces, as these are aids which all implicitly presuppose that users will be regularly entering and searching their journals. In a similar vein to the now ubiquitous RSS feeds, journal service providers now proactively provide users with the latest Tables of Content (TOCs).

Researchers basically only need to provide enough information for the development of a Personal Interest Profile (PIP) related to their subject interests so that in turn, highly personalised current awareness content might be delivered to their desktop. The JISC-funded ticTOCs project is one such service with the appropriate dictum "Search LESS, get MORE, stay CURRENT!" The idea is very simple and as such, effective, as it entails minimal input from researchers, who are then able to keep abreast of the research outputs of the scholarly research in their area by simply browsing TOCs posted to their e-mail account.

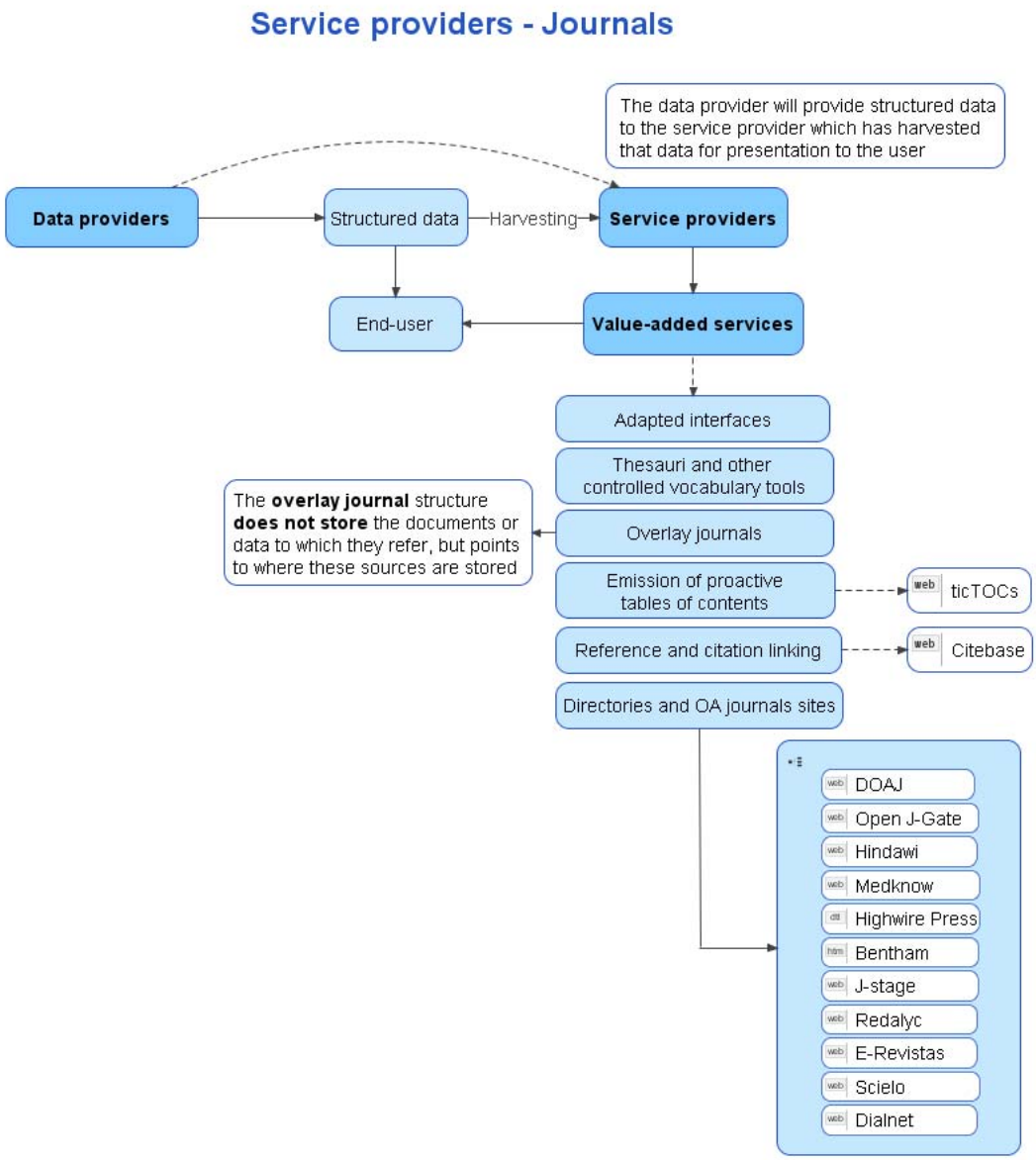


Figure 68. Scheme: service providers (OA journals)

The underlying structure of OA service provision is that there is information exchange between data providers on the one hand, and service providers on the other, the latter providing the service to the end-user. The data providers will provide structured data (e.g. in the form of a bibliographic record) to the service provider (e.g. a search engine) which has harvested that data for presentation to the user. In an OA context, the structured data provided will also take the user – usually via a clickable link – to the full-text information or dataset stored on the data provider, a repository, for example. In short, the service provider provides the basic service of harvesting the data from many data providers, thereby allowing the user to search, from one access point, for information across many sources distributed worldwide, and then the service provider will add value to that information, in one form or another.

Depending on the user, it may make little difference if the information sought is stored in a subject repository, an institutional repository, an OA journal or a collection of such journals, as long as this is full-text. In general, citation practice across disciplines prefers to cite the published version as the version of record. This is partially due to the "brand" value that still attaches to a journal and partially because of customary practice. It remains to be seen if citation preferences change over time with different routes for access, including but not limited to OA repositories, as is beginning to happen in some disciplines (i.e. physics).

OA journal service providers offer the same publication services as non-OA journals service providers, namely distribution of content and peer review, and behind these, there is the production cycle encompassing all typesetting, copyediting, translating, layout and marketing services intrinsic to the production of a high quality journal. All of these activities are precisely the same for OA journals as they are for toll-access journals, which highlight that OA journal publishing is not equivalent to "free" publishing, and that OA journals can only survive if they have the funds to meet the costs of these activities. This production cycle basically constitutes the set of "quality control" services of the journal. However, the most important of all these quality control activities – peer review – is a free service provided by academics for both open and toll access journals.

With the growth in complexity in the information landscape and the concomitant deluge of information in all forms, users will increasingly grow to expect that the relevant information be pre-selected according to their personal profile details, filtered and sent to their desktop without their having to necessarily invest time in searching across that landscape. Service providers will therefore increasingly focus on customised, proactive service provision. Today, the collaborative nature of academic research implies that, if one source of information or data is deemed relevant to and by a given user, it will be probably shared with relevant colleagues, so that managing and sharing journal paper services like Mendeley and Zotero are increasingly becoming the norm.

Overlay journals

The growth of a network of interoperable e-print repositories worldwide, which will become increasingly assimilated into the academic life and routines of research dissemination, will potentially affect journal service providers, reducing the distinction between "gold" and "green" OA. In this new model of scholarly communication, the peer review process, overseen by an "editorial board" of expert-researchers in their areas, would continue to be at the heart of maintaining the high standards of academic publishing. The papers being peer-reviewed may already be deposited in repositories so that learned societies or consortia of institutions could form peer-review groups to provide refereeing of papers outside of the traditional journal environment. Thus, papers deposited in repositories would acquire certified quality status.

Such a model represents what A. Smith referred to as "overlay" journals in 2000, when he described the American Physical Society's move to this overlay model for their Physical Reviews, structured on existing pre-print archives in repositories.

More recently, in 2009, in describing the Overlay Journal Infrastructure for Meteorological Sciences (OJIMS) project, Callagan explained that: "overlay journals sit on top of, and make use of, the content stored in other pre-existing repositories. The overlay journal database itself consists of a number of overlay documents, which are structure documents created to annotate another resource with information on the quality of the resource. The overlay document has three basic elements: metadata about the overlay document itself; information about and from the quality process for which the document was constructed; and basic metadata from the referenced resource to aid discovery and identification."

The overlay journal structure does not store the documents or data to which they refer, but points to where these sources are stored (for example, in a repository). This is arguably of greater relevance today, when there is growing acceptance of the need to provide access to underlying datasets on which research results and analysis presented in articles are based, or to access accompanying video or multimedia files. Overlay journals might also point to other published and unpublished journal articles.

The central role of the overlay journal is, then, to collate metadata about the document and related datasets, their whereabouts, and co-ordinate the peer-review process of these information sources.

In 2001 Peter Suber observed that, since an overlay journal does not have its own apparatus for disseminating accepted papers, but uses the pre-existing system of interoperable archives, it is a minimalist journal that only performs peer review. This represents an especially low-investment, easily-launched form of open-access journals.

Reference and citation linking

The concept of an overlay journal provides a qualitative and deeper extension of another service performed by journal service providers: that of reference and citation linking.

Commercial journal publishers and aggregators have already recognised that reference linking could only be carried out in collaboration with their competitors, i.e. the established journal secondary services supplemented by CrossRef and Digital Object Identifiers, DOIs. An OA network of interoperable repositories provides fertile territory to facilitate link resolution to OA documents, and a project like AIRway (Access path to Institutional Resources via link resolvers) has achieved success in this direction.

The reference link saves the time of readers by connecting them directly to the referenced paper. But, as Garfield, the founder of the ISI, had observed back in 1955, the substantive value of a reference link is not so much that it points to an authored source of the past, but to which papers will cite it in the future. Thus, effort has been invested in the OA web environment for web-based citation services to be offered free to users. Citebase, produced by the Open Citation Project, are examples. Citebase combines metadata harvested from repositories using the OAI-PMH protocol with references from full-text to produce citation data (not full-text, but reference data only) in a database for the article.

Subjects for discussion

- Explain in your own words, to someone in your group, how the underlying structure of service provision works. Try and give examples.
- What is the main differentiating factor of an OA service provider environment to a commercial service provider environment?
- Why has the idea of an “overlay journal” only been conceivable in the context of the growth of OA?

Copyright issues

See *Author’s rights* (p. 81)

M4. OA policies

In recent years, funding agencies, universities, and research institutions have established institutional policies to promote OA to scientific literature; in some cases only requesting, but in growing numbers requiring or mandating OA to publications made by institution members or grantees. As already mentioned, there are three directories where existing policies are registered: JULIET-SHERPA, MELIBEA and ROARMAP. Mandate statements prevail over recommendation statements, but mechanisms for monitoring these are not clearly defined or do not exist at all.

OA policy models

OA policies refer to guidelines that request, encourage, or require the deposit or self-archiving of digital objects, typically those that are considered scholarly outputs. The OA policies that currently exist arise from academic and/or research institutions, and funders. Policy aims differ, with some recommending or encouraging deposit and others requiring it. Universities and research centres may recommend or require deposit, while funding agencies usually mandate the deposit of documents. However, there is no single pattern, and policies include a number of different variables: the type of documents to be archived, when to deposit, if embargoes are allowed, copyright ownership, and if there are exemptions for compliance with the deposit, among others. These variables naturally shape institutions OA statements and policies and affect not only the "strength" of the policy, but also an institution's ability to monitor compliance (Figure 69).

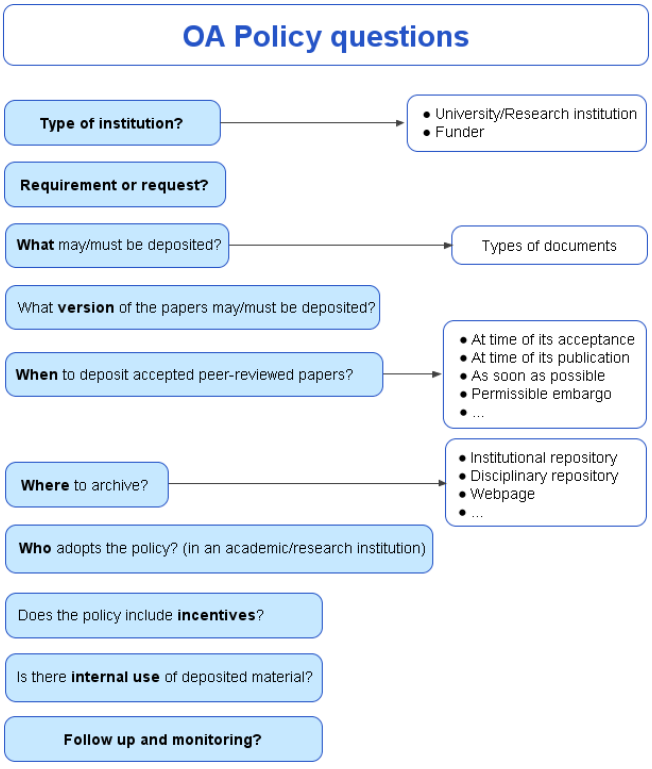


Figure 69. Scheme: OA policy questions

OA policies can be grouped into the following categories:
- policies that require or mandate the deposit of scholarly outputs in OA repositories;
- policies that request or recommend the deposit of scholarly outputs in OA repositories;
- policies that encourage authors to self-archiving in OA providing a number of different reasons why this should be done.

Also the existing copyright agreements between authors and publishers should be considered. It may lead to the following scenarios:
- deposit and immediate access;
- deposit after an embargo;
- immediate deposit of and access to an embargo.

Additional features that should be considered when developing an of OA policy are:
- immediacy;
- publisher embargoes;
- copyright.

Combining these variables (when to deposit, allowable embargoes and possibility of a waiver of the policy in specific cases) a number of combinations for the deposit of scientific publications arises (Table 9).

Table 9. Combination of variables within OA policies to deposit scholarly outputs

Deposit		Allowable embargoes	Immediate metadata	Immediate OA	Exemptions	
at acceptance	***after publication***				***yes***	***no***
X			X	X		X
X			X	X	X	
	X		X	X		X
	X		X	X	X	
X		X	X			X
X		X	X		X	
	X	X	X			X
	X	X	X		X	

When one decides to create an OA policy, it is necessary to design an implementation plan. In accordance with suggestions made in the *Guide to OpenAIRE institutions* (based on the *Open access policies kit*), one should follow the following process:

1. *Researching and studying policies at other institutions (1 to 2 months)*
   - Identification of resources (technical, human) needed for implementation, follow-up and monitoring;
   - Elaboration of implementation plan.

2. *Definition and approval (1 to 3 months)*
   - drafting of proposal;
   - presentation of proposal and consultation with the governing bodies or key people at the institution;
   - approval and formalisation of the policy.

3. *Promotion and awareness (2 to 4 months)*
   - symbolically signing of the Berlin Declaration;

- promoting of the policy using institutional channels and internal communication and information media (institutional dispatch, mailing lists, website, newsletter, etc.);
- holding a public presentation session;
- holding specific promotion sessions and/or presentation of the policy at regular meetings at various levels of the institution;
- issuing Press Release for external promotion;
- registering the Policy on the ROARMAP.

4. *Implementation and Initiation (1 to 3 months)*
   - making the institutional repository available for deposit of publications;
   - making information available (answers to frequently asked q
   - uestions) and/or support services (support for making deposits, clarifications about copyright etc) for members of the institution;
   - communicating and reminding the authority of the policy through institutional and internal channels;
   - carrying out training activities or awareness campaigns about self-archiving.

5. *Follow-up, support and monitoring (ongoing)*
   - maintain and develop information and support services for authors at the institution and users of the repository;
   - supply usage statistics (access, downloads, etc.) to authors and institutional leadership;
   - monitor compliance with the policy (rate/percentage of documents deposited) and provide regular information at various organizational levels (individual authors, organizational departments, top management);
   - survey effective annual research production and produce lists of undeposited publications to send to the authors and/or managing bodies;
   - encourage the production of annual "official" lists of research publications from the institutional repository for governing bodies.

There is no single policy model but if an institution decides to launch one, considering the issues outlined above provide good starting point.

OASIS suggests an "Optimal OA policy for institutions to accommodate publisher embargoes and provides the optimal wording as below indicated:

> The [institution name] expects the authors of papers reporting publicly-funded research to maximise the accessibility, usage and applications of their findings. To this end:
> The [institution name]:
> (1) requires electronic copies of any research papers that have been accepted for publication in a peer-reviewed journal, and are supported in whole or in part by public funding, to be deposited into the institutional digital repository immediately upon acceptance for publication.
> (2) requires that the metadata (title, authors, institutional affiliation, name of journal that has accepted the paper) be exposed from the time of deposition of the research paper
> (3) requires that the full-text be exposed no later than 6 months after publication of the research paper
> (4) encourages authors to retain ownership of the copyright of published papers where possible.

The policy should be accompanied by an explanation to authors as to why OA to research outputs is desirable for both themselves and the institution.

Another model, proposed by Stuart Shieber from the Harvard University, adopted by other institutions such as MIT or Stanford University, not only requires faculty to provide OA to their publications but also requires that members grant to the University permission to make their articles publicly available and exercise the copyright over in those articles. The Harvard University policy states:

> The Faculty of (university name) is committed to disseminating the fruits of its research and scholarship as widely as possible. In keeping with that commitment, the Faculty adopts the following policy:
>
> Each Faculty member grants to the (university name) permission to make available his or her scholarly articles and to exercise the copyright in those articles. More specifically, each Faculty member grants to (university name) a nonexclusive, irrevocable, worldwide license to exercise any and all rights under copyright relating to each of his or her scholarly articles, in any medium, provided that the articles are not sold for a profit, and to authorize others to do the same.
> The policy applies to all scholarly articles authored or co-authored while the person is a member of the Faculty except for any articles completed before the adoption of this policy and any articles for which the Faculty member entered into an incompatible licensing or assignment agreement before the adoption of this policy.
> The Provost or Provost's designate will waive application of the license for a particular article or delay access for a specified period of time upon express direction by a Faculty member.
> Each Faculty member will provide an electronic copy of the author's final version of each article no later than the date of its publication at no charge to the appropriate representative of the Provost's Office in an appropriate format (such as PDF) specified by the Provost's Office.
> The Provost's Office may make the article available to the public in an open access repository. The Office of the Provost will be responsible for interpreting this policy, resolving disputes concerning its interpretation and application, and recommending changes to the Faculty from time to time. The policy will be reviewed after three years and a report presented to the Faculty."

There is another way to approach the development of an OA policy, based on a series of variables or indicators that should be considered for its wording. The directory of OA policies MELIBEA, which not only lists institutions having implemented an OA policy but estimates the strength of each policy, includes the following questions or variables to define indicators:

- is OA required or recommended?
- is coverage of policy total or partial?
- what type of documents can be deposited?
- which versions are allowed to deposit? when? how?
- who owns the copyright?
- are there exemptions?
- who determines the policy?
- is there any follow-up regarding compliance with the policy?

Looking at these questions and applying a weighted multivariable model, MELIBEA obtains an estimate which is called "percentage OA". This takes into consideration a specified weighting of variables and their deviation from the "ideal model." This tool considers how the terms used and the precision in the drafting of such statements effect its implementation and monitoring.

Compliance

Except for some specific scientific communities (i.e. those of high-energy physics and computing science which usually deposit the pre-prints of their works in arXiv as part of their daily tasks), the reality is that only on average 15% of scientific output is deposited. However, for academic/research institutions and funders that have implemented a requirement or mandate for the deposit of publications, the compliance rate is higher (50-60%) as in the case of publications resulting from NIH-funded projects. Deposit in the area of biomedical sciences is also considerably higher when compared with other areas, although it should be noted that many of the public and private agencies that finance research in these scientific areas require the deposit of publications and/or data. These funder OA policies/mandates have forced many publishers to deposit articles directly into PubMed Central on behalf of authors, in order to allow compliance.

OA policies and implementation

OA policies can vary from broad statements of support and promotion of OA, to more prescriptive research-funder "mandates", to institutional policies that declare support for OA as a principle and encourage academics to publish in OA, and can also set out criteria for the overall goals and day-to-day operation of OA IRs. The various OA declarations and manifestos issued worldwide fall into the first category.

The second category is represented by research-funder mandates which add weight to an institutional message of support for OA, because they stipulate compliance with an OA strategy (i.e., depositing a post-print in an OA repository) as a condition when the researcher signs the research funding contract.

The third category is represented by institutional mandates requiring explicit OA policy, encouraging their academics to publish research either in OA journals or deposit refereed final drafts in the IR or a subject-based repository. The executive arm of an institutional OA policy could be the IR, and those responsible for the IR will produce the IR policy, which will cover both its overall mission and objective and will detail the more specific criteria to ensure that decision making procedures regarding the more routine operational aspects are in line with the overall IR policy. At all levels, policy implementation needs to consider and make explicit the benefits and impacts of the OA policy on the various stakeholders involved (Figure 70).

As set out on the Repository Support Project (RSP) website, the IR policy should cover issues related to: content, submission, removal, data re-use, preservation, copyright and embargo; to cover these issues the following types of questions should be answered with the implementation of the policy:

- have you defined an overall vision for your IR to guide your policy framework?
- have you developed a collection policy for your IR?
- have you defined a submission policy for your IR?
- have you defined the content types that you will be including in your IR?
- have you defined a deposit licence and policy for your IR?
- have you defined a re-use licence for your IR?
- have you considered how a preservation policy will emerge from your other policy decisions?
- have you decided who will be responsible for checking the copyright status of items coming into the repository?

The *OpenDOAR policy tool* lists a comprehensive set of options for IR policies, allowing an IR manager to pick and choose aspects of the policy, and then generate policy web pages and documents.

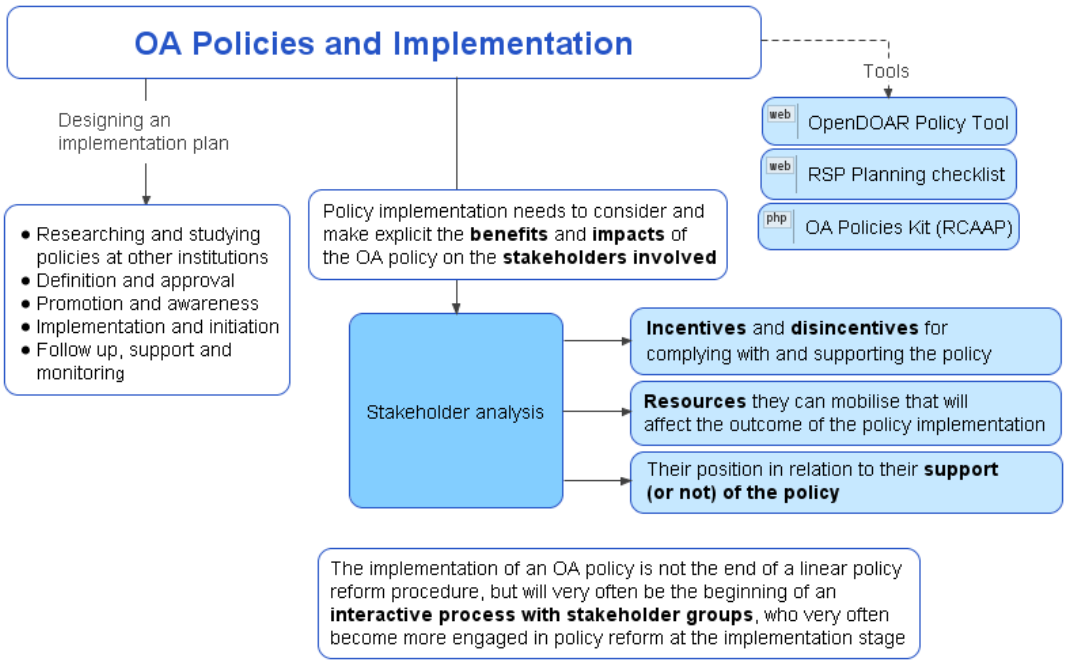


Figure 70. Scheme: OA policies and implementation

The effective implementation of an OA policy – be it on an institutional, regional, national or international scale – will need to count on top-down political support as well as a bottom-up "groundswell" of support from both author-researchers and to a lesser degree, information users. Examples of the former would be a research-funder issuing a mandate or a university producing an institutional mandate. The latter would include author self-archiving in IRs, authors opting to publish in OA journals over toll-access ones, researchers convincing their peers to go "open" and end-users using and citing IR-deposited full-texts.

At all levels, policy implementation needs to consider and make explicit the benefits and impacts of the OA policy on the various stakeholders involved. For this, a "stakeholder analysis" should be carried out, which would start by identifying the various stakeholder groups affected, incentives and disincentives for their complying with and supporting the policy, the resources that each group can mobilise that will affect the outcome of the policy implementation, and their position in relation to their support (or not) of the policy.

It is important to note that the implementation of an OA policy is not the end of a linear policy reform procedure, but will very often be the beginning of an interactive process with stakeholder groups, who very often become more engaged in policy reform at the implementation stage, simply because the effects of change become more visible as implementation proceeds and new challenges will arise at institutional and national level.

Subjects for discussion

- What different levels and types of OA policies can be identified?
- How would you translate an OA policy that is basically a supportive statement for OA into an effective OA policy to be complied with?
- What are the different facets that an OA policy for IR should incorporate to ensure its use?
- How would you implement an OA policy in your institution?

Directories of OA policies

There are three international directories that reflect the existing policies regarding OA to scientific and academic production:

- *SHERPA-JULIET*
  It is a service provided by SHERPA, based at the Centre for Research Communications at the University of Nottingham. It provides summaries of funding agencies' grant conditions on self-archiving and OA publishing of research outputs and data. It allows for comparison of policies of different funding agencies and provides information on what, where and when material is to be archived.
- *ROARMAP*
  It is the Registry of Open Access Repository Material Archiving Policies. It is powered by EPrints 3, free software developed by the University of Southampton.
  It registers and records the OA policies of those institutions who are putting the principle of OA (as expressed by the BOAI and the Berlin Declaration) into practice as recommended by Berlin 3 (as well as the UK Government Science and Technology Committee). It includes international policies of both academic/research institutions and funders.
- *MELIBEA.*
  It has been developed by the research team "Acceso abierto a la ciencia".
  It is a directory and an evaluation tool for institutional OA policies regarding scientific and academic outputs. It describes the existing policies and evaluates them according to qualitative and quantitative criteria based on fulfilment of a set of indicators that reflect the statements of an institutional policy. It has three main objectives to:
  1. establish indicators that reveal the strong and weak points of institutional OA polices.
  2. propose a methodology to guide institutions when they are drawing up an institutional OA policy.
  3. offer a tool for comparing the contents of policies between institutions.

OA policies and authors' behaviour

Research has shown that only around 15% of all journal articles written are accessible in some sort of OA form. This fact seems to be paradoxical in the light of the identifiable OA citation advantage, and also in the context of other survey results that show that when asked if they would agree to depositing copies of their published articles in an OA repository, 81% said that they would willingly do so. Non-OA authors who have not disseminated in OA channels or who do not support the concept of OA raise many concerns to justify their stance, but these are usually concerns which are contradicted by the facts, and so are unfounded.

The fact that a critical mass of researchers does not self-archive in repositories or publish in OA journals (or both) means that advocacy strategies for OA cannot presume that there exists a linear relation between informing researchers of the range of benefits of OA on the one hand, and the researchers changing their publishing behaviour on the other. It also means that there is a highly valid place for university and research funder mandates – the "strong arm" of OA policy – to induce author behavioural change, and reverse the idiosyncratic nature of author support for OA. Experience has shown that such prescriptive OA polices (in the form of mandates) do, indeed, result in the desired outcome of more author self-archiving in repositories and publishing in OA journals.

"Publish or perish" has long been the dictum of the academic community because effectively, research publication indicators in curricula are generally used to evaluate an academic's professional performance and potential for promotion. Beyond the university, research funders will also refer to the track record of publication indicators to decide whether or not to fund a given research project. The number of publications counts, but so does the quality of the journal (IF) and the number of times each article is cited (Figure 71).

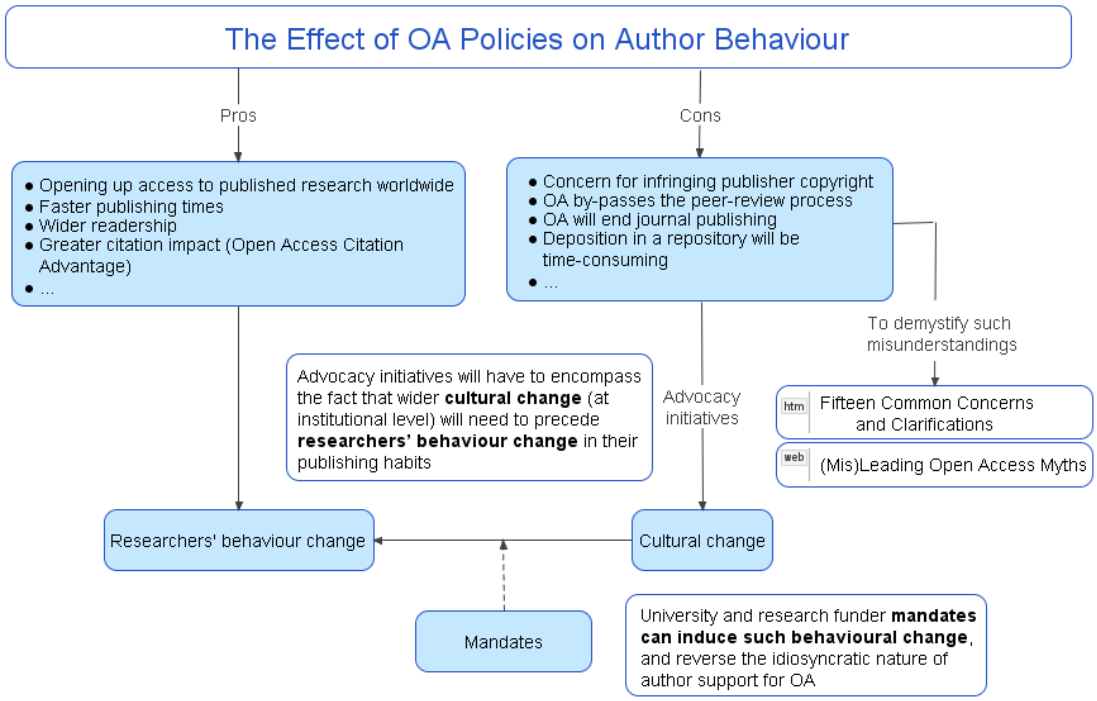


Figure 71. Scheme: OA policies and authors' behaviour

Subjects for discussion

- Which are the potential incentives and disincentives for authors to disseminate their work in OA channels?
- How would you encourageauthors to self-archive in OA repositories?
- Do you believe that OA mandates are a necessary OA policy instrument?

OA Policies in health sciences

OA policies in health sciences (Figure 72), and in general in medicine and biomedical sciences, are particularly important as OA to scholarly publications and data have a significant impact on progress in relation to public health issues. A list of OA repositories is reported in the Annex to this module.

Research funders of medicine and biomedical sciences that have implemented OA policies requiring archiving of scholarly outputs have some common features with respect to what, when and where to deposit:

- what? (articles, conference papers and data)
- when? (as soon as possible, preferably within 6 months after publication)
- where? (in a thematic repository, usually in PubMed Central, PubMed Central UK, PubMed Central Canada, or within one's own IR).

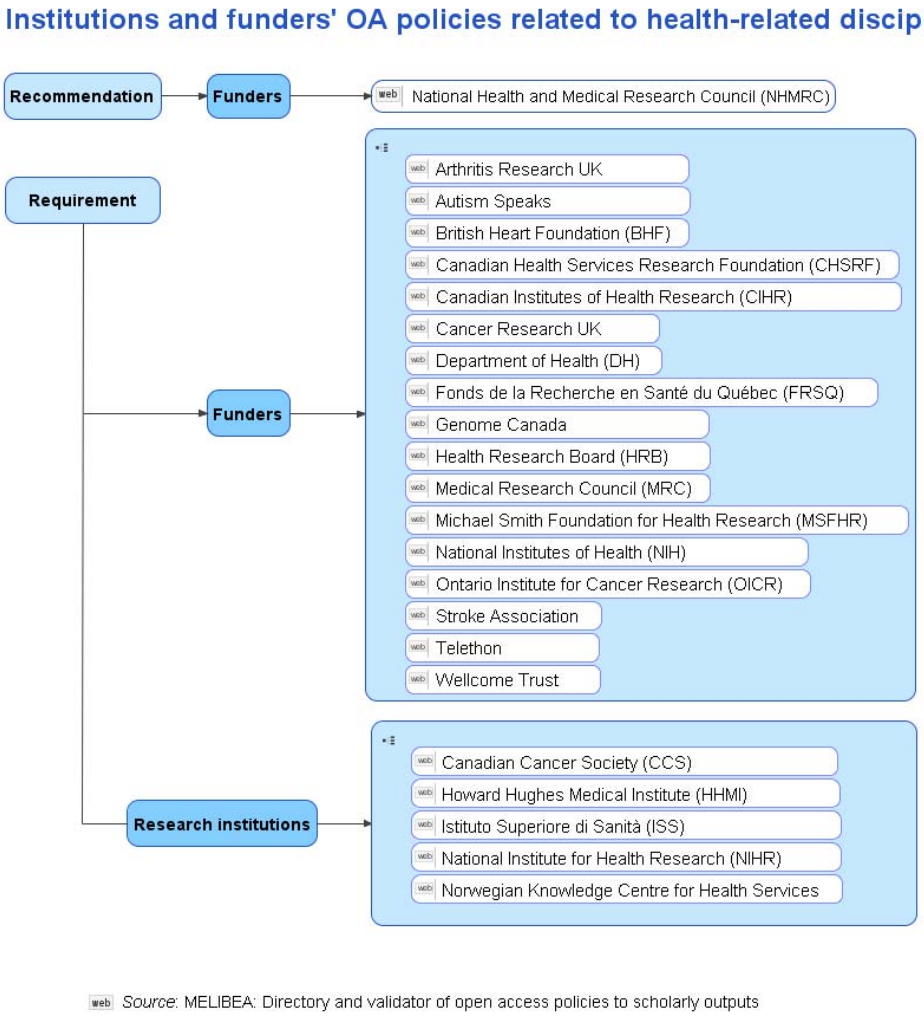


Figure 72. Scheme: OA policies in health sciences

MELIBEA includes a set of research funders with an OA policy requiring the deposit of scholarly publications. They are situated in North America (Canada and the United States) and Europe (multidisciplinary agencies and academic institutions are excluded):

- *Canada*
  - Canadian Health Services Research Foundation (CHSRF)
  - Canadian Breast Cancer Research Alliance (CBCRA)

- Canadian Institutes of Health Research (CIHR)
- Fonds de la Recherche en Santé du Québec (FRSQ)
- Genome Canada
- Heart and Stroke Foundation of Canada
- Michael Smith Foundation for Health Research (MSFHR)
- Ontario Institute for Cancer Research (OICR).

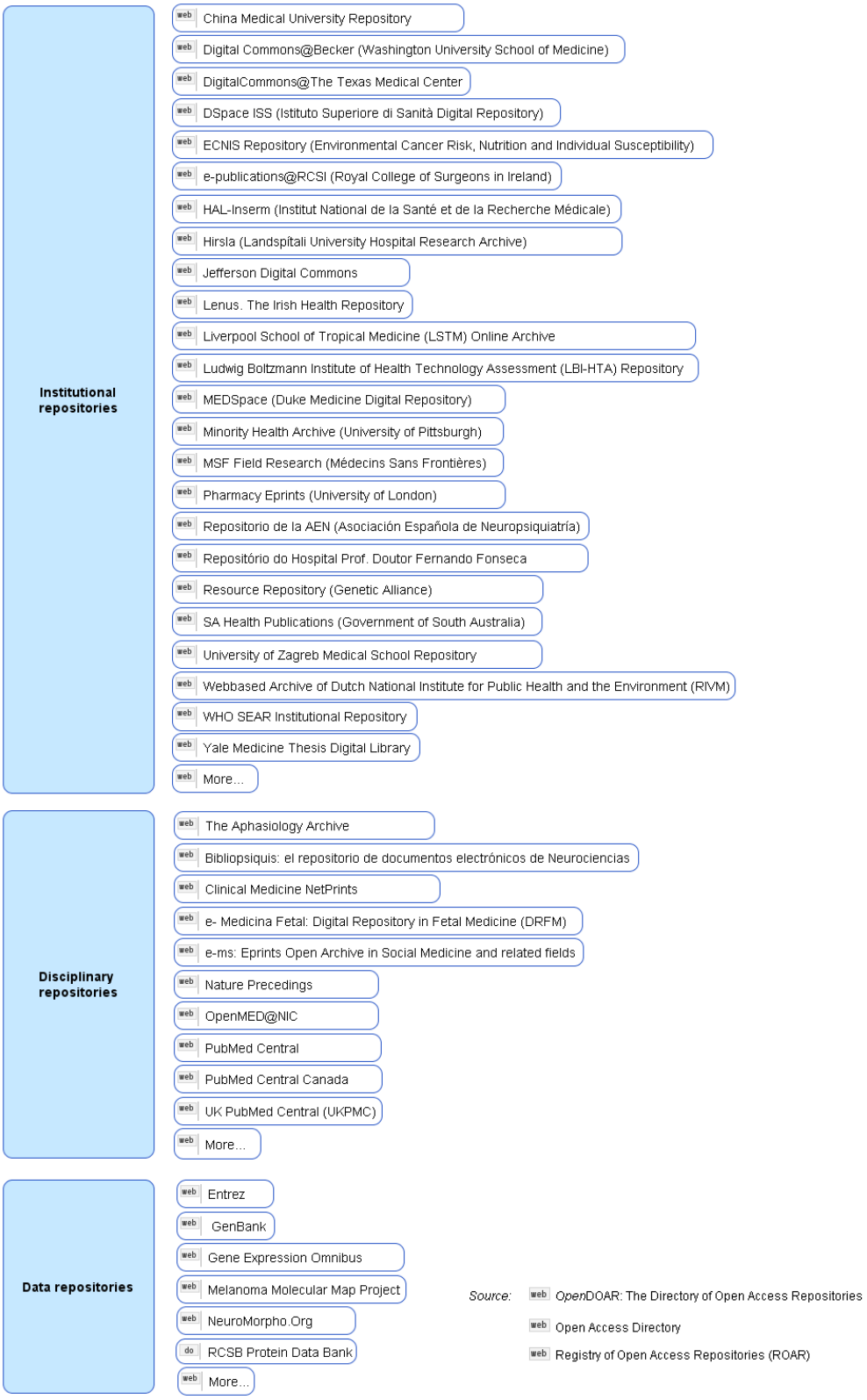
– *United States*
- Autism Speaks
- Gordon and Betty Moore Foundation (GBMF)
- National Institutes of Health (NIH).

– *Europe*
- European Commission-I (Energy, Environment, Health, Information and Communication Technologies, Research Infrastructures)
- Health Research Board (HRB) (Ireland)
- Telethon (Italy)
- Biotechnology and Biological Sciences Research Council (BBSRC) (UK)
- Stroke Association (UK)
- Arthritis Research UK (UK)
- British Heart Foundation (BHF) (UK)
- Cancer Research UK (UK)
- Department of Health (UK)
- Medical Research Council (MRC) (UK)
- National Institute for Health Research (NIHR) (UK).
- Wellcome Trust (UK).

The development and monitoring of OA policies is not particularly easy and there is little information available to support compliance or provide guidance on policy progress. However, in the case of NIH and Wellcome Trust data show the effect of the OA mandate. The Wellcome Trust has recorded an increase in compliance from 2006, currently reaching nearly a 50% compliance. The OA policy of NIH changed in 2007 from a recommendation to a mandate, this resulted in an increase in the percentage of articles freely available through PubMed Central.

ANNEX

OA repositories in health sciences



APPENDIX A
Programmes of the NECOBELAC training courses for trainers (T1)

This Appendix includes the leaflets of the programmes of the eight T1 courses for trainers held in the period April 2011-May 2012:

1. Sao Paolo, Brazil (BIREME)
   13-15 April, 2010
2. Rome, Italy (ISS)
   18-20 October, 2010
3. Bogotá, Colombia (ISP)
   9-11 November, 2010
4. Madrid, Spain (CSIC)
   28 February-2 March 2011
5. Buenos Aires, Argentina (BIREME-ISS)
   16-18 May, 2011
6. Braga, Portugal (UMINHO)
   15-17 June 2011
7. Guadalajara, Mexico (ISS-ISP)
   22-24 August 2011
8. Dublin, Ireland (ISS-UNOTT)
   9 May 2012 + 3 webinars

The design of each leaflet is the same in all programmes, according to the NECOBEALC graphic line; the scientific contents are slightly different from one course to another to comply with local necessities according to a core modular structure. Teachers were both NECOBELAC partners, according to their expertise and availability, plus local experts. All courses envisaged a space for group work.

The duration of all courses was always three days except for the course in Dublin (the last one) which was only one day, but was followed by three webinars.

The logos of NECOBELAC partners and supporting organizations are included in the course programmes.

A1. First T1 course (Brazil • Sao Paolo, 2010)

Target

Representatives of selected institutions in LAC countries, who will be future trainers according to the NECOBELAC strategy.
The course is addressed to people who are already aware of the issues at stake, so discussion/feedback from participants will be an important part of the program.

Objective

Introduce the aims of the NECOBELAC project:

- create awareness in scientific writing and open access publication model and foster cooperation between LAC countries and Europe;
- explain the use of conceptual maps for training;
- point out cultural differences, receive feedback from participants who will be future local trainers.

Languages Spanish, Portuguese
Teachers NECOBELAC partners:
Carlos Agudelo (ISP)
Paola De Castro (ISS)
Reme Melero (CSIC)
Abel Packer, Lilian Nassi Caló (Bireme)
Eloy Rodrigues (UMINHO)
Participants Max 30
Evaluation Continuous feedback during the course and questionnaire

April 13, 2010
DAY *one*

9.00-9.10 Welcome address
Paola De Castro, Abel Parker

9.10-10.30 Presentation of the NECOBELAC Project and the training program
Paola De Castro
Discussion

10.30-11.30 Introduction to knowledge dissemination through journals
Abel Packer
Experiences from SciELO editors
Discussion

coffee break

12.00-13.00 How to use conceptual maps in NECOBELAC training
Reme Melero
Discussion

13.00-13.30 The scientific publication process: the actors of the editorial chain
Paola De Castro

lunch

14.30-15.30 Creation of a document, formats and scientific writing
Carlos Agudelo

15.30-17.00 Evaluation, certification and new metrics for scholarly outputs
Reme Melero
Discussion

April 14, 2010
DAY *two*

9.00-9.30 Distribution, dissemination, access to information in public health
Abel Packer
Experiences from SciELO editors

9.30-10.30 Introduction to Open Access
Reme Melero, Eloy Rodrigues

10.30.11.30 Open Access repositories: technologies, standards and platforms
Eloy Rodrigues

coffee break

12.00-13.00 Open Access repositories: current status and best practices
Eloy Rodrigues

13.00-14.00 Discussion

lunch

15.00-16.00 Open Access Journals. Economic models
Abel Packer, Lilian Nassi Caló, Reme Melero

16.00-17.00 Discussion

April 15, 2010
DAY *three*

9.00-10.00 Cultural differences in the approach of scientific writing and open access publication model
Abel Packer, Carlos Agudelo
Experiences from SciELO editors

10.00-10.30 Discussion

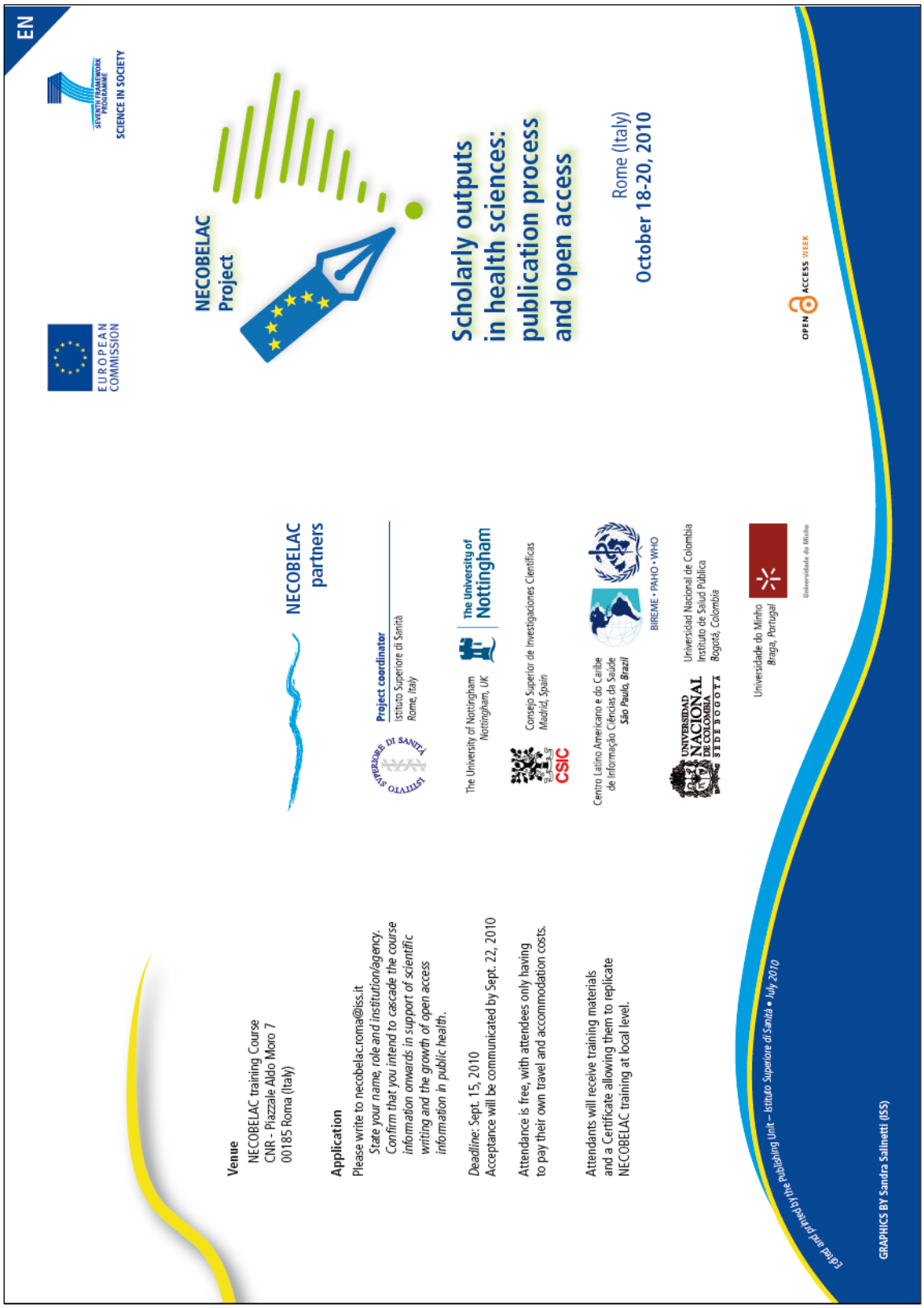
10.30-11.00 The role of NECOBELAC local trainers: expected results and future actions. Distribution of the questionnaire to collect feedback from NECOBELAC Training
Paola De Castro

11.00-11.30 Time to fill in the questionnaire

coffee break

12.00-13.00 Final discussion and conclusions

A2. Second T1 course (Rome • Italy, 2010)



Objective

- Introduce the scope of the NECOBELAC project.
- Create awareness in scientific writing and open access publication models.
- Promote cooperation between Europe and Latin American and Caribbean (LAC) countries.

Target

Professionals from selected scientific institutions that, already involved in the issues at stake, commit themselves to replicate the course at local level.

Participants Max 30

Languages Italian, English

Teachers NECOBELAC partners:
Paola De Castro, Daniela Marsili,
Elisabetta Poltronieri (ISS, Italy)
Reme Melero (CSIC, Spain)
Lilian Nassi Caló (BIREME, PAHO/WHO)
Abel Packer (SciELO, Brasil)
Celina Ramjoué (European Commission)
Participation of local experts is envisaged.

October 18, 2010

NECOBELAC project: activities and future actions

8.30-9.00	Registration
9.00-10.00	Presentation of the NEC0BELAC Project *Paola De Castro*
10.00-11.00	Presentation of participants *Course participants*
coffee break	
11.30-12.00	Training programme and role of NECOBELAC trainers *Paola De Castro*
12.00-13.00	How to use conceptual maps in NECOBELAC training *Reme Melero*
lunch	
14.30-15.00	Development of EU-LAC cooperation for the NECOBELAC Project *Daniela Marsili*
15.00-16.30	Experiences of scientific-technical collaboration between Italy and some Latin American countries *Istituto Italo-Latino Americano, Istituto Superiore di Sanità*
16.30-17.00	Discussion

October 19, 2010

Experiences and group works

9.00-10.00	Introduction to the dissemination of scientific knowledge through journals *Abel Packer*
10.00-11.00	NECOBELAC modules on scientific writing and Open Access *Reme Melero, Paola De Castro*
coffee break	
11.30-12.00	SciELO experience for the diffusion of scientific information in LAC *Lilian Nassi Calò*
12.00-12.30	DSpace ISS: a database for aggregating resources in public health in Italy *Elisabetta Poltronieri*
12.30-13.30	Local experiences: scientific editors and open access *Italian experts*
lunch	
14.30-15.00	Introduction to group work *Paola De Castro*
15.00-17.30	Working group activities in parallel sessions: scientific writing and open access The groups shall discuss and draw up a training programme at local level. *NECOBELAC Partners and facilitators*

October 20, 2010

Reports of group works, sustainability of Project activities and final evaluation

9.00-11.00	Local training programmes produced by the working groups on: scientific writing and open access *Course participants*
coffee break	
11.30-12.30	Sustainability of the Project activities *NECOBELAC Partners*
lunch	
14.00-14.30	Role of the European Commission in dissemination of scientific information *Celina Ramjoué*
14.30-16.00	Evaluation questionnaire *Course participants*
16.00-16.30	Final discussion and conclusions *NECOBELAC Partners*

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A3. Third T1 course (Bogotá • Colombia, 2010)

Destinatarios

Representantes de instituciones de los países LAC que serán futuros formadores según la estrategia NECOBELAC. El curso se dirige a personas conocedoras de las cuestiones tratadas, de manera que la discusión será una parte importante del programa.

Objetivos

- Tomar conciencia sobre la importancia de la comunicación científica y del modelo de publicación en acceso abierto.
- Promover la cooperación entre los países LAC y Europa.
- Explicar el uso de los mapas conceptuales como herramienta de formación.
- Señalar diferencias culturales.

Idioma Español

Profesores Los socios de NECOBELAC:
Carlos A. Agudelo (ISP)
Paola De Castro, Daniela Marsili (ISS)
Lilian Nassi Caló (BIREME/OPAS/OMS)
Alicia López Medina (UNED)
Reme Melero (CSIC)
Eloy Rodrigues (UMINHO)

Evaluación Sondeo durante el curso y cuestionario

9 Noviembre 2010
DÍA *uno*

8.00-8.30	Entrega de credenciales
8.30-8.40	Palabras de bienvenida *Carlos A. Agudelo*
8.40-9.30	Presentación del proyecto NECOBELAC *Paola De Castro*
9.30-10.00	Presentación de los participantes
receso	
10.15-11.00	Rol de los capacitadores de NECOBELAC *Paola De Castro*
11.00-11.45	Desarrollo de la cooperación de EU-LAC NECOBELAC *Daniela Marsili*
11.45-12.30	Como usar los mapas conceptuales en el entrenamiento NECOBELAC *Alicia López Medina, Reme Melero*
almuerzo	
14.00-14.55	El proceso de la publicación científica: los actores de la cadena editorial *Paola De Castro*
14.55-15.50	Redacción de un documento, formatos y escritura científica *Carlos A. Agudelo*
receso	
16.30-17.00	Experiencia de SciELO en la difusión de información científica en LAC *Lilian Nassi Caló*

10 Noviembre 2010
DÍA *dos*

8.30-9.30	Publicaciones en acceso abierto: modelos económicos *Lilian Nassi Caló*
9.30-10.00	Evaluación, certificación y nuevas métricas para resultados académicos *Reme Melero, Paola De Castro*
receso	
10.15-12.00	Presentaciones de experiencias editoriales científicas y acceso abierto en América Latina (Argentina, Chile, Colombia, Cuba, México y Venezuela)
almuerzo	
14.00-14.40	Introducción al acceso abierto *Alicia López Medina, Reme Melero*
14.40-15.20	Repositorios de acceso abierto: políticas, plataformas y tecnologías *Eloy Rodrigues*
receso	
15.35-16.15	Repositorios de acceso abierto, buenas prácticas y estado actual en Europa y LAC *Eloy Rodrigues*
16.15-17.00	Discusión

11 Noviembre 2010
DÍA *tres*

8.30-10.00	Presentacion de experiencias de repositórios de acceso abierto en Europa y LAC (Argentina, Chile, Colombia, Cuba, Italia, México y Venezuela)
receso	
10.15-10.45	Introducción a los grupos de trabajo *Paola De Castro*
10.45-12.30	Trabajo en grupo Elaboración de programas de entrenamiento local (escritura científica/acceso abierto)
almuerzo de integracion – grupo NECOBELAC y participantes	
14.30-15.30	Presentación de las propuestas de trabajo
15.30-16.45	Sostenibilidad de las actividades del proyecto *Paola De Castro*
15.30-16.45	Discusion final y conclusiones *Carlos A. Agudelo, Paola De Castro*

9 Noviembre
19.00-21.00
REUNIÓN DE APERTURA
Conversatorio sobre políticas de repositorios y acceso abierto
Copa de vino
Facultad de Medicina, Universidad Nacional de Colombia

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www.necobelac.eu
info@necobelac.eu

A4. Fourth T1 course (Madrid • Spain, 2011)

Objetivos

- Dar a conocer el proyecto NECOBELAC.
- Remarcar la importancia de la comunicación científica y el acceso a la información.
- Promover la colaboración entre países latinoamericanos y del Caribe y Europa.

Dirigido a

Profesionales de instituciones académicas y de centros de investigación o de la administración pública con conocimientos previos de los temas tratados con el objetivo de convertirse en futuros formadores locales.

Participantes max 30

Idioma Español

Profesores Socios de NECOBELAC:
Paola De Castro, Daniela Marsili,
Elisabetta Poltronieri (ISS, Italia)
Reme Melero (CSIC, España)
Alicia López Medina (UNED, España)
Carlos Agudelo (ISP, Colombia)
Eloy Rodriguez (UMINHO, Portugal)
Lilian Nassi Caló (BIREME PAHO/WHO)
Especialistas locales

28 febrero 2011

Proyecto NECOBELAC y su contexto

8.30-9.00	Registro de los participantes
9.00-10.00	Bienvenida a los participantes. Presentación del proyecto NECOBELAC *Paola De Castro*
10.00-10.30	Presentación de los participantes al curso
10.30-11.00	Desarrollo de la cooperación EU-LAC *Daniela Marsili*
café	
11.30-11.45	El papel de los formadores locales NECOBELAC *Paola De Castro*
11.45-12.15	Material de apoyo: contenidos a través de mapas conceptuales *Reme Melero*
12.15-13.15	El ecosistema de la información científica: consideraciones para el acceso abierto *Ernest Abadal*
comida	
15.00-15.45	Las revistas científicas: vehículos de transmisión de conocimiento *Paola De Castro*
15.45-16.30	De la idea de una revista al factor de impacto: el caso de Nutricion Hospitalaria *Jesus Culebras*
café	
16.30-18.00	Un cambio en el paradigma de acceso al conocimiento: acceso abierto *Reme Melero*

1 marzo 2011

Calidad y sostenibilidad: sesiones paralelas

1. Publicación científica

9.00-9.45	La gestión editorial de revistas *Paola De Castro*
9.45-10.15	Políticas para la mejora de la calidad de una revista *Carlos Agudelo*
10.15-11.00	La evaluación por pares: aspectos éticos *Reme Melero*
café	
11.30-13.30	Criterios de evaluación de revistas vs. bases de dato: SciELO Brasil, LILACS, BVS *Lilian Nassi Calò* Colciencias, Medline *Carlos Agudelo* Latindex España, RESH *Elea Giménez*

2. Acceso Abierto (AA)

9.00-9.45	Políticas AA *Reme Melero*
9.45-11.00	Tecnología e interoperabilidad de repositorios y su implementación en proyectos AA relacionados con la salud pública *Alicia López Medina*
café	
11.30-13.30	Estándares-criterios de evaluación de repositorios: promoción y servicios creados a partir de los repositorios *Eloy Rodrigues*
comida	
14.30-15.10	Financiación: el caso de revistas AA *Lilian Nassi Calò*
15.10-15.45	Copyright vs. auto-archivo *Reme Melero*
15.45-18.00	Trabajo en grupo

2 marzo 2011

Experiencias locales y trabajo en grupo

9.00-10.30	Experiencias locales: Cristina Pérez *(Revista Española de Salud Pública)* Cristina Bojo, Cristina Fraga *(SciELO España)* Verónica Juan Quilis *(Biblioteca Virtual del Sistema Sanitario Público de Andalucía)* Raquel Lavandera Fernández *(Oficina de Investigación Biosanitaria-FICYT, Principado de Asturias)* Elisabetta Poltronieri *(Istituto Superiore di Sanità)*
café	
11.30-12.30	Exposición del trabajo en grupo
12.30-13.00	Valoración del curso. Sostenibilidad de la actividad del proyecto *Paola De Castro*
13.00-13.30	Discusión final y conclusiones

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A5. Fifth T1 course (Buenos Aires • Argentina, 2011)

Objetivos

- Dar a conocer el proyecto NECOBELAC
- Remarcar la importancia de la comunicación científica y el acceso ala información
- Promover la colaboración entre países Latinoamericanos y del Caribe y Europa

Dirigido a

Profesionales convocados por invitación, provenientes de instituciones académicas, centros de investigación de la administración pública con conocimientos previos de los temas tratados con el objetivo de convertirse en futuros formadores locales.

Idioma Español

Profesores Socios de NECOBELAC:
Paola De Castro, Daniela Marsili,
Elisabetta Poltronieri (ISS, Italia)
Reme Melero (CSIC, España)
Alicia López Medina (UNED, España)
Eloy Rodriguez (UMINHO, Portugal)
Lilian Nassi Caló (BIREME OPS/OMS)
Otros profesores
Caty Iannello (OPS/OMS Argentina)
Regina Castro (KMC, OPS/OMS, USA)
Especialistas locales

16 mayo 2011

Proyecto NECOBELAC y su contexto

8.30-9.00	Registro de los participantes
9.00-9.10	Bienvenida a los participantes *Caty Iannello*
9.10-9.30	Apertura del curso *Representantes de Ministerio de Salud Argentina, OPS/OMS Argentina, Istituto Superiore di Sanità, Universidad Maimónides, Ministerio de Ciencia, Tecnología e Innovación Productiva*
9.30-10.10	Presentación del proyecto NECOBELAC *Paola De Castro*
10.10-11.00	Presentación de los participantes
11.00-11.15	Rol de los capacitadores *Paola De Castro*
café	
11.30-12.00	Desarrollo de la cooperación EU-LAC *Daniela Marsili*
12.00-12.30	Como usar los mapas conceptuales en el entrenamiento NECOBELAC *Reme Melero*
12.30-13.15	El proceso de publicación científica: los actores de la cadena editorial *Paola De Castro*
almuerzo	
14.30-15.45	Las revistas científicas: vehículo de transmisión de conocimiento *Regina Castro*
café	
16.00-17.00	Introducción crítica al acceso abierto *Reme Melero, Alicia L. Medina*

17 mayo 2011

Calidad y sostenibilidad

9.00-10.00	Políticas de acceso abierto *Reme Melero*
10.00-10.45	Repositorios de acceso abierto - I parte *Eloy Rodrigues*
café	
11.00-12.00	Repositorios de acceso abierto - II parte *Eloy Rodrigues*
12.30-13.00	Revistas de acceso abierto *Regina Castro, Reme Melero*
almuerzo	
14.30-15.30	Criterios de evaluación de revistas vs bases de datos: SciELO, Medline, LILACS, WoS, JCR, otras bases de datos *Lilian Nassi Calò*
café	
15.45-16.15	Experiencias de replicación de cursos NECOBELAC *Elisabetta Poltronieri*
16.15-18.00	Trabajos de grupo

18 mayo 2011

Experiencias locales y trabajo de grupo

9.00-10.30	Experiencias locales: Comisión Nacional Salud Investiga y Revista Argentina de Salud Pública Repositorio Legisalud Argentina *Ministerio de Salud* SciELO Argentina y desarrollos institucionales *Centro Argentino de Información Científica y Técnica* Biblioteca Electrónica de Ciencia y Tecnología y Repositorio Ciencia Abierta Argentina *Ministerio de Ciencia, Tecnología e Innovación Productiva* Otras experiencias y discusión
café	
10.45-11.45	Exposición de los trabajos de grupo
11.45-12.00	Sostenibilidad de la red NECOBELAC *Paola De Castro*
12.00-12.30	Valoración del curso – Encuesta *Caty Iannello*
12.30-13.00	Discusión final y conclusiones *Paola De Castro*

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A6. Sixth T1 course (Braga • Portugal, 2011)

Objectivos

- Apresentar o âmbito do projecto NECOBELAC
- Criar consciência na escrita científica e modelos de publicação de acesso aberto
- Promover a cooperação entre a Europa e a América Latina e Caribe

Público-alvo

Profissionais de instituições de ensino, institutos de investigação ou de administração pública, com algum conhecimento nas questões abordadas com o objectivo de se tornarem futuros formadores locais.

Idioma Português e espanhol

Formadores Parceiros NECOBELAC:
Paola De Castro, Daniela Marsili,
Elisabetta Poltronieri (ISS, Italia)
Reme Melero (CSIC, España)
Alicia López Medina (UNED, España)
Eloy Rodrigues, José Carvalho, Ricardo Saraiva, Pedro Príncipe, Ana Alice Baptista,
Pedro Morgado (UMINHO, Portugal)
Lilian Nassi Caló (BIREME OPS/OMS)
Clara Boavida (UNOTT, Reino Unido)
Especialistas locais

15 Junho 2011

O projecto NECOBELAC e o seu contexto

8.30-9.00	Recepção e registo dos participantes
9.00-9.10	Boas-vindas *Eloy Rodrigues*
9.10-10.00	Apresentação do projecto NECOBELAC *Paola De Castro*
10.00-10.30	Apresentação dos formandos
intervalo	
11.00-11.30	A cooperação NECOBELAC EU-LAC *Daniela Marsili*
11.30-11.45	O papel dos futuros formadores no projecto NECOBELAC *Paola De Castro*
11.45-12.15	Utilização dos topic maps *Reme Melero*
12.15-12.30	Introdução ao trabalho de grupo *José Carvalho e Pedro Príncipe*
almoço	
14.00-15.00	O sistema de comunicação científica *Ana Alice Baptista*
15.00-15.30	Publicação científica e comunicação nas ciências da saúde *Pedro Morgado*
intervalo	
16.00-17.00	Acesso aberto: uma introdução *Eloy Rodrigues*
17.00-17.30	Políticas Open Access *Reme Melero*

16 Junho 2011

Boas práticas e experiências locais

9.00-9.30	O processo editorial *Paola De Castro*
9.30-10.00	O processo de peer review *Reme Melero*
10.00-10.30	Qualidade e avaliação de revistas *Lilian Nassi Caló*
intervalo	
11.00-11.45	Repositórios – gestão, políticas, disseminação e boas práticas *Eloy Rodrigues e Clara Boavida*
11.45-12.30	Repositórios – tecnologias e interoperabilidade *Alicia Lopez Medina e José Carvalho*
almoço	
14.00-14.30	Copyright e auto-arquivo *Reme Melero e Clara Boavida*
14.30-14.45	Experiências locais dos cursos de formação NECOBELAC *Elisabetta Poltronieri*
14.45-15.30	Acesso aberto em Portugal: o projecto RCAAP *Ricardo Saraiva e José Carvalho*
intervalo	
16.00-17.30	Experiências locais: RIHUC: o primeiro repositório da área da saúde em Portugal *Helena Donato* *(Hospitais da Universidade de Coimbra)* Scielo Portugal *Cristiana Agapito e Ana Rita Lopes* *(SCIELO Portugal)*

16 Junho 2011 *(cont.)*

A perspectiva do editor da Revista Portuguesa de Saúde Pública
Isabel Andrade
(Escola Nacional de Saúde Pública)
Blimunda: políticas das revistas em Portugal
Ana Alves Pereira (UNL)

17 Junho 2011

Trabalho de grupo e conclusão

9.00-10.45	Desenvolvimento da estratégia de implementação dos cursos T2 (trabalho de grupo)
intervalo	
11.00-11.30	Visita guiada à Escola de Ciências da Saúde
11.30-12.15	Apresentação dos trabalhos de grupo
12.15-12.45	Avaliação do curso, sustentabilidade da actividade do projecto *Paola De Castro*

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A7. Seventh T1 course (Guadalajara • Mexico, 2011)

Objetivos

- Dar a conocer el proyecto NECOBELAC
- Remarcar la importancia de la comunicación científica y el acceso a la información
- Promover la colaboración entre países Latinoamericanos, del Caribe y Europa

Dirigido a

Profesionales convocados por invitación, provenientes de instituciones académicas, centros de investigación de la administración pública con conocimientos previos de los temas tratados con el objetivo de convertirse en futuros formadores locales.

Idioma Español

Profesores Socios de NECOBELAC:
Paola De Castro, Daniela Marsili (ISS, Italia)
Reme Melero (CSIC, España)
Pedro Urra González (BIREME/PAHO/WHO)
Carlos Agudelo (ISP, Colombia)
José Carvalho (UMINHO, Portugal)
Clara Boavida (UNOTT, Reino Unido)
Héctor Raúl Solís Gadea, Teresa Rodríguez (Universidad de Guadalajara, México)
Eduardo Aguado (REDALYC)
Especialistas locales

Día 1

8.30-9.00 Registro de los participantes

9.00-9.20 Bienvenida a los participantes
Héctor Raúl Solís Gadea, Carlos Agudelo

El proyecto NECOBELAC y su contexto

9.20-10.00 Presentación del proyecto NECOBELAC
Paola De Castro

10.00-10.30 Presentación de los participantes

10.30-10.45 Rol de los capacitadores
Paola De Castro

café

11.15-11.45 Desarrollo de la cooperación EU-LAC
Daniela Marsili

11.45-12.15 Cómo usar los mapas conceptuales en el entrenamiento NECOBELAC
Reme Melero

12.15-13.00 Introducción crítica al proceso de publicación científica
Pedro Urra González

almuerzo

14.30-15.15 Introducción crítica al acceso abierto
Reme Melero

15.15-16.00 Directrices para la redacción de artículos científicos
Carlos Agudelo

café

16.30-17.00 Revistas de salud pública y dónde encontralas
Pedro Urra González

Día 2

Publicar en revistas científicas y repositorios

9.00-9.45 Calidad y evaluación de revistas
Eduardo Aguado

9.45-10.30 Repositorios – Gestión, políticas, diseminación y buenas prácticas
José Carvalho, Clara Boavida

café

11.00-11.45 Repositorios – Tecnologías e interoperabilidad
José Carvalho

11.45-12.30 Copyright y licencias de uso
Reme Melero

12.30-13.30 Acceso abierto en la práctica: espacio de discusión entre socios NECOBELAC y participantes al curso

almuerzo

Experiencias locales

14.45-15.30 Desarrollo de iniciativas de acceso abierto en México
Teresa Rodríguez

15.30-16.00 Experiencias locales
Isabel Galina Russel
(Universidad Nacional Autónoma de México)
Alejandro Machorro
(Instituto Nacional de Salud Pública)

café

16.30-17.00 Experiencias locales
Vladimir Burgos, Soledad Ramírez
(Instituto Tecnológico de Monterrey)

Día 3

Trabajos de grupo y discusión

9.00-10.35 Trabajos de grupo
Elaboración de programas de entrenamiento local (escritura científica/acceso abierto)

café

11.00-12.00 Exposición de los trabajos de grupo

12.00-12.15 Sostenibilidad de la red NECOBELAC
Paola De Castro

12.15-12.30 Valoración del curso
Encuesta

12.30-13.00 Discusión final y conclusiones
Paola De Castro

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A8. Eighth T1 course (Dublin • Ireland, 2012)

Objectives

- Introduce the scope of the NECOBELAC project.
- Create awareness in scientific writing and open access publication models.
- Promote cooperation between Europe and Latin American and Caribbean (LAC) countries.

Target

Professionals from academia, research institutes or public administration who intend to become future local trainers.

Topic Scientific publication and open access to science in the area of health and related disciplines.

Language English

Teachers NECOBELAC partners:
Paola De Castro (ISS, Italy)
Bill Hubbard, Jackie Wickham (CRC, UK)
Kevin Balanda (IPH, Ireland)
Patricia Clarke (Health Research Board)
Niamh Brennan (Trinity College Dublin)
Aoife Lawton (Health Service Executive)
Joanne Callinan (Milford Care Centre)

Facilitators
Laurian Williamson (CRC, University of Nottingham)
Nancy Pontika (CRC, University of Nottingham)

PROGRAMME

The NECOBELAC project and information dissemination in public health

9.30-9.45 Welcome address
Kevin Balanda, local authorities, project partners

9.45-10.30 Presentation of NECOBELAC project and NECOBELAC EU-LAC cooperation
Paola De Castro

10.30-10.40 Participants' introduction
Course participants

coffee break

Scientific writing

11.00-11.30 Critical introduction to scientific journals and the editorial process
Paola De Castro

11.30-12.00 The formats of scientific articles
Paola De Castro

Open access routes

12.00-12.30 Critical introduction to open access
Bill Hubbard

12.30-13.00 Open access repositories: processes and structures including copyright
Laurian Williamson

lunch

Practical adoption of open access and support networks

13.45-14.30 Open access and national adoption
Bill Hubbard

14.30-15.30 Four local perspectives: funding agency, academic, health services and community sector
Patricia Clarke, Niamh Brennan, Aoife Lawton, Joanne Callinan

coffee break

15.30-16.45 Group work on local NECOBELAC open access events
Kevin Balanda, Paola De Castro

16.45-17.00 Discussion and evaluation

As a follow-up of the course three webinars are planned

Webinar 1 **May 18, 2012**
reserved to NECOBELAC course attendants
Developing a T2 course strategy for course implementation community
(presented by ISS)

Webinar 2 **June 8, 2012**
open to all
Open access publications – process management, policies, advocacy and good practices
(presented by RSP)

Webinar 3 **June 22, 2012**
opened to all
Repositories – management, policies, advocacy and good practices
(presented by RSP)

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APPENDIX B
NECOBELAC training replication initiatives (T2)

This Appendix includes a list of all training replication activities (T2) performed by the participants of NECOBELAC courses for trainers. In the period April 2010-July 2012, 40 replication activities were realized in Europe and Latin America; such training replication activities were performed also in countries were T1 courses were not realized (Table B1).

Annexes B1-B4 show some examples of leaflets of programmes related to NECOBELAC training replication activity including selected issues from the NECOBELAC core modules.

Table B1. NECOBELAC training initiatives (T2) (total 40 events) organized by the participants in the training courses for trainers (T1)

Title	Tp	L	Date	Country (place)	Institution
2010 (7)					
Derechos de autor, copyright, trabajos publicados y su reutilización en un entorno digital de acceso abierto (Congreso Info2010)	W	ES	17/4	Cuba (La Habana)	Ministerio de Ciencia, Tecnología y Medio Ambiente de la República de Cuba - Instituto de Información Científica y Tecnológica (IDICT)
NECOBELAC, publicaciones científicas y repositorios de acceso abierto (5 main modules of presentations)	W	ES	24/6	Uruguay (Montevideo)	Biblioteca Nacional de Medicina/Centro Nacional de Documentación e Información en Ciencias de la Salud (BINAME/CENDIM)
Publicaciones científicas y repositorios de acceso abierto en Colombia	T	ES	3-6/8	Colombia (Bogotá)	Hemeroteca de Nacional Universitaria Carlos Lleras Restrepo
Publicaciones científicas y repositorios de acceso abierto en Colombia	T	ES	9-10/9	Colombia (Bogotá)	Hemeroteca de Nacional Universitaria Carlos Lleras Restrepo
Publicaciones científicas y repositorios de acceso abierto en Colombia	T	ES	21-22/10	Colombia (Bogotá)	Hemeroteca de Nacional Universitaria Carlos Lleras Restrepo
Taller Necobelac. Laboratorio de acceso abierto, derechos de autor y depósito en repositorios digitales	W	ES	16-19/11	Chile (Valdivia)	Universidad Austral del Chile
Lesson on OA publishing	T	IT	23/11	Italy (Rome)	"Sapienza" Università di Roma
2011 (21)					
Biblioteca Virtual del Sistema Sanitario Público de Andalucía		ES	13-15/4	Spain (Cadiz)	Palacio de Congresos de Cádiz
Workshop on Writing Scientific Papers	W	ES	11/3	Cuba (La Habana)	Universidad de la Havana
Nozioni di strategia individuale per la stesura di un lavoro scientifico internazionale: come, dove, quando	T	IT	25-26/3	Italy (Rome)	"Sapienza" Università di Roma - Dip. Medicina Sperimentale
La competenza racchiusa nella pratica clinica dell'infermiere e dell'ostetrica	T	IT	19-20/5	Italy (Rome)	Università Cattolica del S. Cuore - Scuola DAI

to be continued

continues

Title	Tp	L	Date	Country (place)	Institution
Scrivere per comunicare la scienza: tecniche, strategie e risorse nel web 2.0	T	IT	9-10/6	Italy (Legnaro)	Istituto Zooprofilattico Sperimentale delle Venezie
Produzione scientifica. Accessibilità = utilizzo	W	IT	28/6	Italy (Rome)	Istituto Regina Elena
Taller NECOBELAC de capacitación para la publicación de trabajos cíentificos. 1. Revistas científicas	W	ES	4/8	Argentina (Posadas)	Unidad Academica del Parque de la salud. REMINSA-Ministerio de Salud Pública e Misiones. Facultad de ciencias exactas - UNAM
Taller NECOBELAC de capacitación para la publicación de trabajos cíentificos. 2. Accesso abierto	W	ES	11/8	Argentina (Posadas)	Unidad Academica del Parque de la salud, REMINSA-Ministerio de Salud Pública e Misiones. Facultad de ciencias exactas
Seminario virtual para formadores en el tema del Movimiento Educativo Abierto. Movimiento educativo abierto	W	ES	12/9	virtual	CLARISE
Cómo escribir y publicar artículos cientificos	W	ES	22/9	Colombia (Santa Marta)	Facultad de Ciencias de la salud Universidad del Magdalena
Primer Curso de Entrenamiento NECOBELAC a nivel local: T2	T	ES	Sept	Uruguay (Montevideo)	Departamento de Documentación y Biblioteca Facultad de Enfermería Universidad de la República
Estratégias de publicação científica	W	PT	19/10	Portugal (Minho)	Universidade do Minho, Escola Superior de Enfermagem
Evaluacion de Articulos Cientificos	T	ES	40841	Colombia (Bogotá)	Instituto de salud Pública
Pubblicare un articolo scientifico: strumenti e tecniche.	T	IT	25-26/10	Italy (Rome)	Istituto Zooprofilattico Lazio Toscana
Seminario virtual para formadores en el tema del Movimiento Educativo Abierto. Integración de REA considerando derechos de autor	W	ES	26/10	virtual México	CLARISE
Pubblicazioni ad Accesso Aperto: modelli economici alternativi, sostenibilità e vantaggi per i fruitori	W	IT	28/10	Italy (Vercelli)	Università del Piemonte orientale “A. Avogadro”
Evaluación de articulos científicos	W	ES	8/11	Colombia (Bogotá)	Vicedecanatura de Investigaciones Facultad de Medicina Universidad Nacional de Colombia

to be continued

continues

Title	Tp	L	Date	Country (place)	Institution
Seminario virtual para formadores en el tema del Movimiento Educativo Abierto. Redacción para la comunicación científica	W	ES	22/11	virtual México	J. Vladimir Burgos, Coordinador de CLARISE
International seminar "Cambio climático, Ambiente y Salud: un enfoque de cooperación para la difusión de las informaciones"	W	ES	28-30/11	Ecuador (Quito)	Universidad Tecnológica Equinoccial Raúl Harari
2nd Meeting of Editors of Artemisa online. Politicas editoriales y Artemisa en linea (Necobelac course of 15-18 hrs within the event)	T	ES	1-2/12	México (Cuernavaca)	CENIDSP - Instituto Nacional en Salud Pública (INSP), Centro de Información en Decisiones en Salud Pública - Departamento de Recursos Virtuales (Alejandro Machorro Nieves)
Scientific writing, Open Access, Science evaluation	T	IT	Feb	Italy (Rome)	Istiuto Superiore di Sanità
2012 (12)					
Curso Introductorio Mejorando la Escritura Científica	T	ES	8-10/2	Colombia (Bogotá)	Universidad Nacional de Colombia
European Meeting on Media and Information Literacy (EMMILE)	W	EN	27-29/2	Italy (Milan)	Regione Lombardia
Workshop on scientific communication	W	IT	7/3	Italy (Rome)	"Sapienza" Università di Roma
Curso introductorio Mejorando la escritura científica	T	ES	7-8/3	Colombia (Pereira)	Universidad Tecnológica de Pereira
As Bibliotecas das Ciências da Saúde na era da Literacia Digital	W	PT	29-30/3	Portugal (Lisboa)	Associação Nacional das Farmácias
¿Como definir los terminos de una politica institucional o editorial en favor de acceso abierto? (12th Information International CONGRESSInfo 2012)	T	ES	16-20/4	Cuba (La Habana)	Havana International Conference Center
V Jornadas Nacionales de Bibliotecas Universitarias: Visión a futuro y retos de las bibliotecas en la educación superior	W	ES	26-27/4	Peru (Chiclayo)	Universidad Peruana Cayetano Heredia Lima - Peru
NECOBELAC T1 first webinar. Developing a T2 strategy for course implementation community	T	EN	18/5	virtual	The University of Nottingham (UK)
Question and answer/information session on Open Access publishing	W	EN	21-25/5	Ireland (Limerick)	HSE Mid-West Library Services, Mid Western Regional Hospital
De Escritura Científica como parte del Proyecto NECOBELAC	T	ES	4-5/6	Colombia (Bucaramanga)	Universidad Industrial de Santander

to be continued

continues

Title	Tp	L	Date	Country (place)	Institution
NECOBELAC T1 second webinar. Open access publications - process management, policies, advocacy and good practices	T	EN	8/6	virtual	The University of Nottingham (UK)
NECOBELAC T1 third webinar. Repositories - management, policies, advocacy and good practices	T	EN	22/6	virtual	The University of Nottingham (UK)

Tp: Type → **W**: Workshop; **T**: Training course
L: Language → **EN**: English, **ES**: Spanish; **IT**: Italian; **PT**: Portuguese;

B1. Poster announcing 4 replication activities in Colombia (2010)

B2. Leaflet of a Conference organized as a replication activity in Italy (2011)

Questo evento rientra nelle attività di formazione promosse dal progetto europeo NECOBELAC, coordinato dall'Istituto Superiore di Sanità, che mira a sviluppare attività di formazione sulla comunicazione scientifica e l'open access.
In ambito sanitario l'informazione e la conoscenza sono vitali per garantire la qualità delle cure e ogni sforzo deve essere fatto per renderle disponibili a tutti: ricercatori, operatori, pazienti, familiari e cittadini. Inoltre, la conoscenza prodotta dalla ricerca finanziata con fondi pubblici deve essere liberamente accessibile.

lo scopo

Il seminario vuole aprire una riflessione per sensibilizzare le istituzioni pubbliche sulla necessità di promuovere archivi istituzionali e archivi aperti che rendano accessibile la produzione scientifica nazionale e di mettere a confronto i criteri tradizionali di valutazione della ricerca con quelli innovativi offerti dal web.

Relatori

Lucio Capurso
(Direttore Generale IFO)
Mauro Castelli
(editore rivista JECCR)
Gaetana Cognetti
(Istituto Regina Elena)
Paola De Castro, Elisabetta Poltronieri, Renata Solimini, Franco Toni
(Istituto Superiore di Sanità)
Alain Frey
(Thomson Reuters)
Gaetano Guglielmi
(Ministero della Salute)
Paola Gargiulo
(Caspur)
Paola Muti
(Direttore Scientifico, Istituto Regina Elena)

il seminario

9.00 Saluti istituzionali
Prof. Lucio Capurso
Prof.ssa Paola Muti

9.30 Presentazione del progetto NECOBELAC: un esempio di collaborazione tra Europa e America Latina per sostenere l'accesso aperto ai risultati della ricerca
Paola De Castro

10.00 Archivi aperti ed istituzionali: il progetto DSpace ISS e i risultati dell'indagine sugli archivi istituzionali degli IRCCS oncologici italiani
Elisabetta Poltronieri, Corrado Di Benedetto

10.20 Riviste ad accesso aperto: il caso del *Journal of Experimental & Clinical Cancer Research*, la rivista dell'Istituto Regina Elena
Mauro Castelli

10.40 La disponibilità e il riuso dei dati scientifici
Paola Gargiulo

11.00 Nuove funzionalità della versione 5 della piattaforma Web of Knowledge con focus sull'integrazione di RID in WoS e valutazione dei ricercatori
Alain Frey

11.30 Pausa caffè
offerta da Thomson Reuters

11.40 Valutazione della ricerca tra vecchie e nuove metriche
Renata Solimini

12.00 Le risorse di Bibliosan, la rete delle Biblioteche di ricerca del SSN
Franco Toni

12.20 Le risorse scientifiche aperte ai pazienti e cittadini: la Biblioteca del Paziente IRE e la rete nazionale dei punti informativi oncologici
Gaetana Cognetti

12.40 Dibattito

13.00 Conclusioni
Gaetano Guglielmi

l'approfondimento

15.00-16.30
Sala multimediale
Biblioteca Digitale Istituto Regina Elena
Formazione *in vivo*: la nuova versione 5 della piattaforma Web of Knowledge
Alain Frey

B3. Leaflet of a course on scientific writing organized in Italy (March 2011)

Modalità di iscrizione
È possibile iscriversi inviando la seguente scheda compilata alla Società Organizzativa Varesi s.r.l. entro l'**11 marzo 2011**, nelle seguenti modalità:
– mezzo posta: Varesi s.r.l. - Via Chieti, 2 - Roma 00161
– mezzo e-mail: varesisrl@yahoo.it
– mezzo fax: +39.06.44.25.45.39

Quote di partecipazione

☐ Laureati €150,00+IVA 20%
☐ Studenti €60,00+IVA 20%

Modalità di pagamento
– Bonifico Bancario intestato a: Varesi s.r.l. - Cassa di Risparmio di Parma e Piacenza, Ag. 2, Roma - C/C 634180/54 - Cab 03201 - Abi 06230 - Cin P
IBAN IT73P0623003201000063418054
– Assegno intestato a: "Varesi s.r.l." da inviare alla Segreteria Organizzativa in Via Chieti 2, 00161 Roma
– Pagamento in sede congressuale (quota aggiuntiva e 20,00+IVA)

Cognome e Nome

Qualifica

Indirizzo

Città Prov. CAP

Tel. Cell. Fax

E-mail

Codice Fiscale Partita IVA
(per ricevere la fattura è necessario indicare la ragione sociale e l'indirizzo fiscale)

Trattamento dei dati personali (Legge 196/03)

☐ Autorizzo l'utilizzo dei dati ☐ Non autorizzo l'utilizzo dei dati

Data Firma

Direzione del Corso
Paola DE CASTRO, Enrico ALLEVA

Segreteria Scientifica
Paola DE CASTRO, Enrico ALLEVA, Laura RICCERI

Segreteria Tecnica
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Segreteria Organizzativa
Varesi s.r.l. - Via Chieti, 2 - 00161 Roma
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25-26 marzo 2011

Nozioni di strategia individuale per la stesura di un lavoro scientifico internazionale

come, dove, quando

Questo corso rientra nelle attività di formazione del Progetto NECOBELAC, finanziato dalla Commissione europea nell'ambito del 7 Programma Quadro. N. 230583

TERZA EDIZIONE

RELATORI
E. Alleva, I. Branchi, F. Chiarotti, F. Cirulli, P. De Castro, M. Della Seta, F. Napolitani, L. Ricceri, D. Santucci, R. Solimini

SEDE DEL CORSO
"Sapienza" Università di Roma - Dip. Medicina Sperimentale
Aula Patologia Generale A - Viale Regina Elena, 324 - Roma

25 MARZO 2011

8,00 Registrazione partecipanti

8,30 Presentazione: **Prof. Luigi Frati**
Magnifico Rettore, "Sapienza" Università di Roma

I MODULO
Essere accettato nella comunità internazionale

9,30 Introduzione: significato dell'evoluzione della letteratura scientifica nel III millennio (Enrico Alleva)

10,30 Ricerca delle fonti bibliografiche: il primo passo per la realizzazione di un prodotto pubblicabile (Maurella Della Seta)

11,30 Coffee break

11,45 Lettura critica di un articolo: un esercizio propedeutico alla stesura di un manoscritto (Laura Ricceri, Igor Branchi e Enrico Alleva)

12,05 Parametri di valutazione per la scelta della rivista: indicizzazione su Pubmed, Impact Factor, accessibilità in rete (Igor Branchi e Enrico Alleva)

12,50 La letteratura sulla valutazione scientifica (Renata Solimini)

13,10 Scelta strategica della rivista in funzione del proprio curriculum (Enrico Alleva)

26 MARZO 2011

II MODULO
Come impostare correttamente un articolo scientifico

9,00 "Introduzione" e "Discussione" di un lavoro scientifico (Enrico Alleva)

10,00 Redazione delle sezioni "Metodi" e "Risultati" (Daniela Santucci)

10,50 Analisi statistica: i più frequenti errori e come evitarli (Flavia Chiarotti)

11,40 Coffee break

12,00 Graficazione dei risultati: elogio della leggibilità e della sobrietà editoriale (Francesca Cirulli)

12,50 Attribuzione dei crediti: authorship, agenzie finanziatrici, credenziali curricolari (Enrico Alleva)

13,20 Lunch break

14,00 Riassunto e scelta delle parole chiave: "farsi trovare" (Laura Ricceri)

14,30 "Vancouver Style": denominatore comune per una corretta pubblicazione a livello internazionale (Paola De Castro e Federica Napolitani)

15,30 Le fasi di revisione del manoscritto e correzione delle bozze (Paola De Castro e Federica Napolitani)

16,30 Vincere le battaglie con il referee, ovvero "elogio dell'umiltà" (Enrico Alleva)

Chiusura dei lavori

Premiazione dell' autore dell'articolo più meritevole

I partecipanti potranno, entro il 21 gennaio 2011, inviare alla Segreteria Organizzativa un proprio articolo scientifico che non sia già stato pubblicato, che verrà sottoposto al giudizio dei Relatori i quali, nell'ambito della chiusura del Corso, premieranno con targa l'autore dell'articolo più meritevole.

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DOCENTI

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Francesca CIRULLI Ricercatore, Reparto di Neuroscienze Comportamentali, Dip. Biologia Cellulare e Neuroscienze, Istituto Superiore di Sanità, Roma

Paola DE CASTRO Primo Tecnologo, Settore Attività Editoriale, Servizio Informatico Documentazione Biblioteca e Attività Editoriali, Istituto Superiore di Sanità, Roma

Maurella DELLA SETA Primo Tecnologo, Servizio Documentazione, Servizio Informatico Documentazione Biblioteca e Attività Editoriali, Istituto Superiore di Sanità, Roma

Federica NAPOLITANI Redazione Annali ISS, Settore Attività Editoriale, Servizio Informatico Documentazione Biblioteca e Attività Editoriali, Istituto Superiore di Sanità, Roma

Laura RICCERI Ricercatore, Reparto di Neurotossicologia e Neuroendocrinologia, Dip. Biologia Cellulare e Neuroscienze, Istituto Superiore di Sanità, Roma

Daniela SANTUCCI Ricercatore, Reparto di Neuroscienze Comportamentali, Dip. Biologia Cellulare e Neuroscienze, Istituto Superiore di Sanità, Roma

Renata SOLIMINI Ricercatore, Reparto di Farmacodipendenza, Tossicodipendenza e Doping, Dip. Farmaco, Istituto Superiore di Sanità, Roma

B4. Leaflet of a course on scientific publication organized in Italy (October 2011)

Il corso fornisce strumenti e tecniche per una corretta redazione di un articolo scientifico e promuove l'adozione di modelli di diffusione in accesso aperto.

25 ottobre

8.30 Registrazione dei partecipanti

8.45 Apertura dei lavori
Remo Rosati
(Direttore Generale f.f. IZS Lazio e Toscana)

9.00 Benvenuti al corso
e presentazione dei partecipanti
Antonella Bozzano

9.15 Presentazione del progetto NECOBELAC:
un ponte tra l'Europa e l'America Latina
per la diffusione delle informazioni scientifiche
in sanità pubblica
Paola De Castro

9.30 Pubblicazioni scientifiche: sintetica panoramica
dello "stato dell'arte"
Romano Zilli

10.30 Intervallo

10.45 Il processo di comunicazione scientifica
Paola De Castro

11.15 Il Vancouver style come vademecum
per la pubblicazione di un articolo scientifico
Paola De Castro

11.45 La struttura IMRAD
Federica Napolitani

12.00 Esercitazione
Maria Cristina Barbaro, Federica Napolitani,
Anna Maria Rossi, Sandra Salinetti

12.30 Tabelle e figure
Sandra Salinetti

12.50 Esercitazione
Maria Cristina Barbaro, Federica Napolitani,
Anna Maria Rossi, Sandra Salinetti

13.15 Intervallo

14.15 La citazione bibliografica
Sandra Salinetti

14.45 Esercitazione
Maria Cristina Barbaro, Federica Napolitani,
Anna Maria Rossi, Sandra Salinetti

15.15 La correzione di bozze
Federica Napolitani

15.45 Esercitazione
Maria Cristina Barbaro, Federica Napolitani,
Anna Maria Rossi, Sandra Salinetti

16.30 Discussione e chiusura dei lavori

26 ottobre

9.30 Pubblicare in open access
Elisabetta Poltronieri, Donatella Gentili,
Annarita Barbaro

10.15 Esercitazione
Annarita Barbaro, Donatella Gentili,
Elisabetta Poltronieri

11.00 Intervallo

11.15 Una finestra sull'impact factor
Patrizia Gradito, Cristina Ferri

12.00 Discussione e questionari

13.00 Conclusione dei lavori

Docenti ed esercitatori

Istituto Superiore di Sanità, Roma

Settore Attività Editoriali
Paola De Castro, Maria Cristina Barbaro,
Federica Napolitani, Elisabetta Poltronieri,
Anna Maria Rossi, Sandra Salinetti

Biblioteca
Annarita Barbaro, Donatella Gentili

Istituto Zooprofilattico Sperimentale
delle Regioni Lazio e Toscana, Roma

Ufficio di Staff Ricerca, Sviluppo e Cooperazione
Internazionale
Romano Zilli

Ufficio di Staff Formazione, Comunicazione
e Documentazione
Antonella Bozzano, Patrizia Gradito, Cristina Ferri

APPENDIX C
Health institutions and other bodies involved in the project network per country

This Appendix contains the names of the institutions (212) included in the NECOBELAC network. The internal divisions (Departments, Laboratories, Sections, etc.) within the institution itself are sometimes reported. The online Community section of the NECOBELAC website also includes the names and email addresses of the persons within the institutions. In some cases it was not possible to associate personal names, appearing in the community, to any institution.

Table C1. Institutions and other bodies involved in NECOBELAC network (2009-2012) and their URLs per country

Country	URL
Argentina (23)	
Centro Argentino de Información Científica y Tecnológica (CAICYT) - CONICET	www.caicyt.gov.ar/
Centro de Estudios de Estado y Sociedad	www.cedes.org/
Instituto Nacional de Investigación y Desarrollo Pesquero	www.inidep.edu.ar/home.htm
Ministerio de Ciencia, Tecnología e Innovación Productiva	www.mincyt.gov.ar/
Ministerio de Salud de la Nación	www.msal.gov.ar/
Ministerio de Salud de la Nación, Comisión Nacional Salud Investiga	www.saludinvestiga.org.ar/
Ministerio de Salud de la Provincia de Buenos Aires	www.ms.gba.gov.ar/
Ministerio de Salud de la Provincia de Córdoba, Hospital Domingo Funes	www.cba.gov.ar/canal.jsp?idCanal=33
Ministerio de Salud de la Provincia de Entre Ríos	www.entrerios.gov.ar/msalud/
Ministerio de Salud de la Provincia de Jujuy	www.msaludjujuy.gov.ar/
Ministerio de Salud de la Provincia de Mendoza	www.salud.mendoza.gov.ar/
Ministerio de Salud de la Provincia de Misiones	www.salud.misiones.gov.ar/
Ministerio de Salud de la Provincia de Tucumán	www.msptucuman.gov.ar/
Ministerio de Salud de Neuquén	www.saludneuquen.gov.ar/
Sistema Nacional de Repositorios Digitales en Ciencia y Tecnología	repositorios.mincyt.gob.ar/
Universidad Maimónides	www.maimonides.edu/
Universidad Nacional de Córdoba	www.unc.edu.ar/
Universidad Nacional de La Plata	www.unlp.edu.ar/
Universidad Nacional de Lanús	www.unla.edu.ar
Universidad Nacional de Tucumán	www.unt.edu.ar/
Universidad Nacional de Villa María	www.unvm.edu.ar/
Universidad Nacional del Rosario	www.unr.edu.ar/
Asociación Argentina de Microbiología	www.aam.org.ar/
Brazil (28)	
BIREME/OPAS/OMS	new.paho.org/bireme/
Faculdade de Medicina de Botucatu, UNESP, Programa de Pós Graduação em Saúde Coletiva	www.pg.fmb.unesp.br/
Faculdade Social da Bahia	www.faculdadesocial.edu.br/
Fundação Oswaldo Cruz, Escola Nacional de Saúde Pública Sérgio Arouca. Programa de Pós-Graduação em Saúde Pública e Meio Ambiente	www.ensp.fiocruz.br/portal-ensp/
Fundação Presidente Antônio Carlos, Faculdade UNIPAC de Ciencias jurídicas, ciencias sociais, letras e saude de uberlândia	www.unipac.br/
Instituto de Saúde Coletiva	www.isc.ufba.br/index.php
Instituto do Coração do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo	www.hcnet.usp.br/
Instituto Israelita de Ensino e Pesquisa Albert Einstein	www.einstein.br
Ministerio do Trabalho e Emprego, FUNDACENTRO	portal.mte.gov.br/portal-mte/
OPAS/OMS, Centro Pan-Americano de Febre Aftosa-	new.paho.org/panaftosa/
Secretaria de Estado da Saúde do Paraná, Superintendência de Políticas de Atenção Primária em Saúde, Escola de Saúde Pública do Paraná	www.escoladesaude.pr.gov.br/

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Country	URL
Universidada Estacio de Sá, Mestrado em Saúde da Família	www.estacio.br
Universidade de São Paulo, Sisitema Integrado de Bibliotecas	www.usp.br/sibi/
Universidade de São Paulo, Escola de Artes, Ciências e Humanidades	each.uspnet.usp.br/site/
Universidade de São Paulo, Faculdade de Medicina, Pós Graduação em Medicina Preventiva	www.fm.usp.br/preventiva/
Universidade de São Paulo, Faculdade de Odontologia	www.fo.usp.br/
Universidade de São Paulo, Faculdade de Saúde Pública	www.fsp.usp.br/site/
Universidade Estadual de Londrina, Programa de Pós-Graduação em Saúde Coletiva	www.uel.br/pos/saudecoletiva/
Universidade Estadual Paulista (Unesp)	www.unesp.br/
Universidade Federal de Mato Grosso, Instituto de Saúde Coletiva	www.ufmt.br/
Universidade Federal de Minas Gerais, Programa de Pós-Graduação em Saúde Pública	www.medicina.ufmg.br
Universidade Federal de Pelotas, Pós Graduação em Saúde Coletiva - Epidemiologia	www.ufpel.edu.br/
Universidade Federal de São Paulo	www.unifesp.br/
Universidade Federal de São Paulo, Centro Cochrane do Brasil	www.centrocochranedobrasil.org.br/institucional.html
Universidade Federal do Espírito Santo, Centro de Ciências da Saúde. Programa de Pós graduação em Saúde Coletiva	portal.ufes.br/
Universidade Federal do Rio Grande do Sul	www.ufrgs.br/ufrgs/inicial
Universidade Luterana do Brasil	www.ulbra.br/
Universidade Metodista de Piracicaba	www.unimep.br/
Chile (1)	
Colegio Médico de Chile (A.G)	www.colegiomedico.cl/
Colombia (24)	
Armada Nacional. Dirección de Sanidad Naval	www.armada.mil.co/
Asociación Colombiana de Psiquiatria	www.psiquiatria.org.co/
Colciencias	www.colciencias.gov.co/
Ediciones Médicas Latinoamericanas S.A.	www.empresario.com.co/edmedicaslat/
Facultad de Ciencias Sociales, Universidad de los Andes	faciso.uniandes.edu.co
Grupo de Unidades de Información de la Región Central en Salud	www.unirecscolombia.org
Instituto Nacional de Salud	www.ins.gov.co/
Ministerio de la Protección Social. Instituto Nacional de Cancerología	www.cancer.gov.co
Secretaria Distrital de Salud de Bogotá	www.saludcapital.gov.co
Sociedad Colombiana de Anestesiologia y Reanimacion	www.scare.org.co/
Universidad Antonio Nariño	www.uan.edu.co/
Universidad Colegio Mayor de Nuestra Señora del Rosario	www1.universia.net/
Universidad Cooperativa de Colombia	http://www.ucc.edu.co/
Universidad de Antioquia, Facultad Nacional de Salud Pública	www.udea.edu.co/
Universidad de Antioquia, Escuela de Nutrición y Dietética	www.udea.edu.co/
Universidad de Caldas	www.ucaldas.edu.co/
Universidad de Córdoba	web.www3.unicordoba.edu.co/
Universidad de La Sabana	www.unisabana.edu.co/
Universidad del Magdalena, Facultad de Ciencias de la Salud	www.unimagdalena.edu.co/
Universidad del Quindío	portal.uniquindio.edu.co/
Universidad del Valle, Facultad de Salud, Escuela de Salud Pública	salud.univalle.edu.co/
Universidad del Valle, Instituto Cisalva	grupocisalva.univalle.edu.co/InstitutoCisalva/
Universidad Nacional de Colombia	www.unal.edu.co/
Universidad Nacional de Colombia, Facultad de Medicina, Instituto de Salud Pública	www.medicina.unal.edu.co/

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Country	URL
Costa Rica (3)	
PAHO/WHO	www.paho.org
Universidad de Costa Rica	www.ucr.ac.cr/
Universidad de Costa Rica, Instituto de Investigaciones Psicològicas	www.iip.ucr.ac.cr/
Cuba (1)	
Escuela Nacional de Salud Pública de Cuba	www.ensap.sld.cu/
Ecuador (4)	
Escuela Politécnica Nacional, Biblioteca de Ingeniería Eléctrica y Electrónica	biee.epn.edu.ec/
Escuela Superior Politécnica del Litoral	www.espol.edu.ec/
Pontificia Universidad Católica del Ecuador, Instituto de Salud Pública	www.puce.edu.ec/
Universidad de Cuenca, Centro de Salud Colectiva, Facultad de Ciencias Médicas	www.ucuenca.edu.ec/
Ireland (14)	
AuthorServ	authorserv.com/
Health Research Board	www.hrb.ie/
Health Service Executive, Health Intelligence	www.hse.ie/eng/about/Who/clinical/Health_Intelligence/
Health Service Executive, Lenus, the Irish Health Repository	www.lenus.ie/hse/
Institute of Public Health in Ireland	www.publichealth.ie/
Irish Cancer Society	www.cancer.ie/
Irish Hospice Foundation	www.hospice-foundation.ie/
Mildford Care Centre	www.milfordcarecentre.ie/
Queen's University Belfast	www.qub.ac.uk/
Royal College of Physicians of Ireland	www.rcpi.ie/
Trinity College, Research Information Systems & Services Ussher Library	www.tcd.ie/Library/LIRC/
University College Cork	www.ucc.ie/
University of Limerick	www.ul.ie/
University of Limerick, Faculty of Education and Health Sciences	www.ehs.ul.ie
Italy (30)	
Azienda USL Roma D	www.aslromad.it/
Consiglio Nazionale delle Ricerche, Istituto di ricerche sulla popolazione e le politiche sociali	www.irpps.cnr.it/it
ENEA. Centro ricerche Casaccia. Biblioteca	www.enea.it/it/centro-ricerche-casaccia/
IRCCS Centro Cardiologico Monzino	www.cardiologicomonzino.it
IRCCS Centro di Riferimento Oncologico	www.cro.sanita.fvg.it/
IRCCS Centro San Giovanni di Dio Fatebenefratelli	www.irccs-fatebenefratelli.it
IRCCS Fondazione Policlinico San Matteo	www.sanmatteo.org
IRCCS Fondazione Santa Lucia	www.hsantalucia.it
IRCCS Fondazione Stella Maris	www.inpe.unipi.it/
IRCCS Istituto Dermatologico San Gallicano	www.ifo.it/
IRCCS Istituto Nazionale dei Tumori	www.istitutotumori.mi.it/
IRCCS Istituto Ortopedico Galeazzi	www.galeazzi-gsd.it/
IRCCS Istituto Regina Elena, Biblioteca	www.ifo.it/
IRCCS Istituto Tumori "Giovanni Paolo II"	www.oncologico.bari.it/

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Country	URL
IRCCS Oasi Maria Santissima	www.oasirccs.it/
IRCCS. San Raffaele Pisana	www.sanraffaele.it/
Istituto Nazionale per l'Assicurazione contro gli Infortuni sul Lavoro	www.ispesl.it/
Istituto Superiore di Sanità	www.iss.it
Istituto Superiore per la Protezione e la Ricerca Ambientale	www.isprambiente.gov.it
Istituto Zooprofilattico Sperimentale delle Regioni Lazio e Toscana	www.izslt.it/izslt/
Istituto Zooprofilattico Sperimentale delle Venezie	www.izsvenezie.it/
Istituto Zooprofilattico Sperimentale del Mezzogiorno	www.izsmportici.it/
Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna	www.izsler.it
Istituto Zooprofilattico Sperimentale della Puglia e della Basilicata	www.izsfg.it/
Istituto Zooprofilattico Sperimentale della Sardegna	www.izs-sardegna.it/
"Sapienza" Università di Roma	www.uniroma1.it/
Università degli Studi di Torino, Dipartimento di Neuroscienze, Biblioteca "L. Bergamini"	www.unito.it/
Università degli Studi Piemonte Orientale A. Avogadro	www.unipmn.it
Università degli Studi Roma Tre	www.uniroma3.it/
Umberto 1 Policlinico di Roma	www.policlinicoumberto1.it/
Mexico (27)	
Centro de Investigación Científica de Yucatán, A.C.	www.cicy.mx/
Centro Nacional de Investigación de Danza, INBA	www.bellasartes.gob.mx/
Centro Universitario UTEG	www.uteg.edu.mx
Consejo Nacional para el Entendimiento Público de la Ciencia AC	www.comprendamos.org/
Instituto Mexicano del Seguro Social (IMSS)	www.imss.gob.mx/
Instituto Nacional de Enfermedades Respiratorias "Ismael Cosío Villegas"	www.iner.salud.gob.mx/
Instituto Nacional de Pediatria	www.pediatria.gob.mx/
Instituto Nacional de Salud Pública	www.insp.mx/
Instituto Politécnico Nacional	www.ipn.mx/
Secretaría de Educación Jalisco	portalsej.jalisco.gob.mx
SEJ-Consejo Interinstitucionalde Investigación Educativa	portalsej.jalisco.gob.mx
Sistema de Información Científica RedALyC	redalyc.uaemex.mx/
Sistema Tecnológico de Monterrey	www.itesm.edu/
Universidad Autónoma de Guadalajara	www.uag.mx/
Universidad Autónoma de Guerrero. Preparatoria No.15	www.uagro.mx/
Universidad Autónoma de Nuevo León	www.uanl.mx/
Universidad Autónoma Metropolitana	www.uam.mx/
Universidad de Guadalajara	www.udg.mx/
Universidad del Valle de México	www.uvmnet.edu/
Universidad Nacional Autónoma de México	www.unam.mx/
7 individual contacts	
Peru (2)	
Instituto de Medicina Tropical de la Universidad Nacional Mayor de San Marcos	www.unmsm.edu.pe/
Universidad Peruana Cayetano Heredia	www.upch.edu.pe/
Portugal (22)	
Balcão Único Jurídico	
Centro Hospitalar Tondela-Viseu EPE	www.min-saude.pt/
Cooperativa de Ensino Superior Politécnico e Universitário	www.cespu.pt/
Escola Superior de Enfermagem do Porto	portal.esenf.pt

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Country	URL
Fundação Dr. António Cupertino de Miranda	www.facm.pt/facm/facm/pt/
Fundação para a Computação Científica Nacional	www.fccn.pt/pt/
Hospitais da Universidade de Coimbra	www.huc.min-saude.pt/
Instituto Politécnico de Viseu	www.ipv.pt/
Ministério da Ciência, Tecnologia e Ensino Superior, Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais	www.gpeari.mctes.pt/
Unidade Local de Saúde do Alto Minho (ULSAM)	www.cham.min-saude.pt/
Universidade Católica Portuguesa, Centro Regional do Porto	www.ucp.pt/
Universidade de Aveiro	www.ua.pt/
Universidade de Lisboa, Faculdade de Farmácia	www.ff.ul.pt/
Universidade de Santiago de Compostela	www.usc.es/
Universidade de Trás-os-Montes e Alto Douro	www.utad.pt/
Universidade do Minho	www.uminho.pt/
Universidade do Minho, Escola de Psicologia	www.psi.uminho.pt/
Universidade do Minho, Escola Superior de Enfermagem	www.ese.uminho.pt/
Universidade do Porto, Faculdade de Medicina	sigarra.up.pt/
Universidade do Porto, Biblioteca Virtual	sigarra.up.pt/
Universidade Nova de Lisboa, Escola Nacional de Saúde Pública	www.ensp.unl.pt/
Universidade Nova de Lisboa, Faculdade de Ciências Médicas	www.fcm.unl.pt/
Spain (22)	
Consejo Superior de Investigaciones Científicas	www.csic.es/
Fundación Centro Nacional de Investigaciones Cardiovasculares Carlos III	www.cnic.es/es
Hospital de León, Servicio de Cirugia II	www.saludcastillayleon.es/sanidad/
Instituto Aragonés de Ciencias de la Salud	www.iacs.aragon.es/
Instituto de Salud Carlos III, Agencia de Evaluación de Tecnologías Sanitarias	www.isciii.es/
Instituto de Salud Carlos III, Biblioteca Nacional de Ciencias de la Salud, Unidad Scielo	www.isciii.es/
Ministerio de Sanidad	www.msps.es/
Ministerio de Sanidad y Política Social	www.msc.es/
Oficina de Investigación Biosanitaria, FYCIT del principado de Asturias	www.ficyt.es/oib/
Red Estatal de Docencia Universitaria	www.red-u.org/
Servicio Andaluz de Salud. Hospital Universitario Virgen de la Victoria	www.juntadeandalucia.es/
Sistema Sanitario Público de Andalucía, Biblioteca Virtual	www.bvsspa.es
Sociedad Española de Reumatología, Unidad de Investigación	www.ser.es/
Universidad Autónoma de Madrid	www.uam.es/
Universidad Autónoma de Madrid, Biblioteca de Medicina	www.uam.es/
Universidad Carlos III de Madrid, Departamento de Bibliotecología	www.uc3m.es/
Universidad de Almería y Education & Psychology I+D+I	cms.ual.es
Universidad de Granada, Facultad de Farmacia	www.ugr.es/
Universidad de Murcia	www.um.es/
Universidade de Santiago de Compostela, Biblioteca	www.usc.es/
Universitat de Girona, Biblioteca	www.udg.edu/
Universidad Nacional de Educación a Distancia	www.uned.es
United Kingdom (5)	
British Library	www.bl.uk/
Institute of Nanotechnology	www.nano.org.uk/
Key Perspectives Ltd	www.keyperspectives.co.uk/
University of Birmingham	www.birmingham.ac.uk
University of Nottingham	www.nottingham.ac.uk

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Country	URL
Uruguay (4)	
Administración de los Servicios de Salud del Estado	www.asse.com.uy/
Sociedad de Psicólogos del Uruguay	www.psicologia.org.uy/
Universidad de la República, Facultad de Enfermería, Departamento de Documentación y Biblioteca	www.fenf.edu.uy/
Universidad de la República, Facultad de Medicina, Biblioteca Nacional de Medicina, Centro Nacional de Documentación e Información en Ciencias de la Salud	www.fenf.edu.uy/
Venezuela (2)	
Ministerio del Poder Popular para la Educación Universitaria	www.mppeu.gob.ve/
Universidad de los Andes Merida Venezuela	www.ula.ve/

APPENDIX D
NECOBELAC dissemination initiatives within international events

NECOBELAC project activities and related issues were presented in the following events:

- 14 Conferences in Europe (involving 9 different countries);
- 4 Conferences in Latin America (involving 5 countries);
- 2 Conferences in the USA.

Besides these, NECOBELAC took part in the events organized within the International Open Access week in the years 2009, 2010, and 2011 (some events are planned also for the 2012 OA week edition).

Two other original dissemination initiatives, different from events, are worth mentioning:

- the "Bogotà Declaration" issued in 2010 during the NECOBELAC Training course for trainers in Bogotà to stress the commitment of the course participants in support of OA within their institutions and counties, with the support of NECOBELAC partners (Figure D1).
- the editorial "NECOBELAC supporting Open Access, a path to open science" jointly written by the project partners (translated in the four project languages) and then published in different journals in the period close to the 2011 OA week (Figure D2).

The dissemination initiatives below are listed in chronological order according to continent and place.

Dissemination initiatives

Europe

1. Ireland • Dublin, 2-5 June 2009
   European Association of Health Information Libraries/EAHIL Workshop
   "Working with others: explore, engage, extend"
2. Switzerland • Geneva, June 17-19, 2009
   CERN Workshop "Innovations in Scholarly Communication"
3. Italy • Rome, October 19, 2009
   1st Workshop Istituto Italo Latino Americano-Istituto Superiore di Sanità
   "Open Access to information for the safeguard of public health. Which opportunities from the NECOBELAC network?"
4. Italy • Rome, May 10-11, 2010
   Workshop on CRIS, CERIF and Institutional Repositories
   "Maximizing the benefit of research information for researchers, research managers, entrepreneurs and the public"
5. Portugal • Lisbon, June 14-18, 2010
   European Association of Health Information Libraries. 12th EAHIL Conference
   "Discovering new seas of knowledge. Technologies, environments and users in the future of health libraries"
6. Turkey • Ankara, September 22-24, 2010
   2nd International Symposium on "Information Management in a Changing World"
7. Italy • Rome, October 18, 2010
   Seminario AIB, CASPUR e CILEA "Costruire l'Europa della Conoscenza: il ruolo dell'Open Access" on the occasion of the Open Access week 2010
8. Spain • Tarragona, October 28-30, 2010
   Mediterranean Editors and Translators/MET Meeting 2010
   "Facilitating knowledge transfer – through editing, translation, coaching"
9. Poland • Warsaw, May 28, 2011
   15th Science Picnic under the slogan "Freedom"

10. Turkey • Istanbul, July 5-8, 2011
    European Association of Health Information Libraries/ EAHIL 2011 Workshop
    "Active learning and research partners in health"
11. Spain • Barcelona, September 13-16, 2011
    23rd International Society of Environmental Epidemiology annual Conference/ISEE and the workshop "Latin America chapter. Pensando una agenda de investigación en salud ambiental para América Latina: compartamos un Sur"
12. Germany • Berlin, September 26-28, 2011
    PKP/ 3rd International Scholarly Publishing Conference 2011
13. Italy • Milan, February 27-29, 2012
    European Meeting on Media and Information Literacy "EMMILE in Libraries and beyond"
14. Belgium • Brussels, July 4-6, 2012
    European Association of Health Information Libraries Conference 2012
    "Health information without frontiers".

Latin America

1. Peru • Lima, October 27-29, 2009
   XV Inter-American Meeting for Librarians and Agricultural Information Specialists/ RIBDA 2009 "Technological Innovation in Open Access for Agricultural and Environmental Information".
2. Argentina • Buenos Aires, March 18-20, 2010
   VI International Conference on Rare Diseases and Orphan Drugs/ICORD 2010
3. Brazil • Rio de Janeiro, April 11-13, 2011
   Seminario Internacional "Acesso Livre ao Conhecimento"
4. Brazil • Rio de Janeiro, November 24-25, 2011
   CONFOA/2a Conferencia luso-brasileira "Acesso Aberto"
5. Uruguay • Montevideo, March 22-24, 2012
   International Scientific Conference " Environmental Health in the Political Agenda" (Conferência Científica Internacional "Salud Ambiental en la Agenda Política").

USA

1. Porto Rico • San Juan, August 13-18, 2011
   International Federation of Library Associations/77th IFLA General Conference and Assembly "Libraries beyond libraries: Integration, Innovation and Information for all"
2. Washington DC • Washington, November 9-10, 2011
   Berlin 9 International Conference "Open access conference. The impact of open access in research and scholarship"

Curso internacional de formación de capacitadores NECOBELAC en Colombia
Bogotá – Colombia 9 – 11 de Noviembre del 2010

BOGOTÁ DECLARATION

Within the international initiatives promoting the development of global knowledge, the NECOBELAC project fosters cooperation between Europe, Latin America and the Caribbean countries to improve the dissemination of scientific information in public health as well as the quality of life and population development. This project acts through the organization and realization of training courses for trainers to improve the production and quality of scientific documents and increase the visibility and availability of research results by supporting open access publishing initiatives.

The different experiences of the European and Latin American project partners form the basis for taking action towards active learning to develop regional, national and local initiatives and policies in favour of Open Access.

On November 9-11, 2010, one of the NECOBELAC international training courses for trainers took place in Bogotá (Colombia). The project partners representing European (Italy, Spain, Portugal, United Kingdom) and Latin American (Brazil and Colombia) institutions, together with the participants on the NECOBELAC training course representing academic and public health institutions in Argentina, Chile, Colombia, Cuba, Ecuador, Mexico and Peru, in accordance with the NECOBELAC project objectives, commit themselves to:

1. Promote the drawing up and enforcement of public policies in favour of the unlimited availability of scientific output.
2. Promote and support the quality of scientific writing.
3 Promote Open Access to scientific output in their Nations.

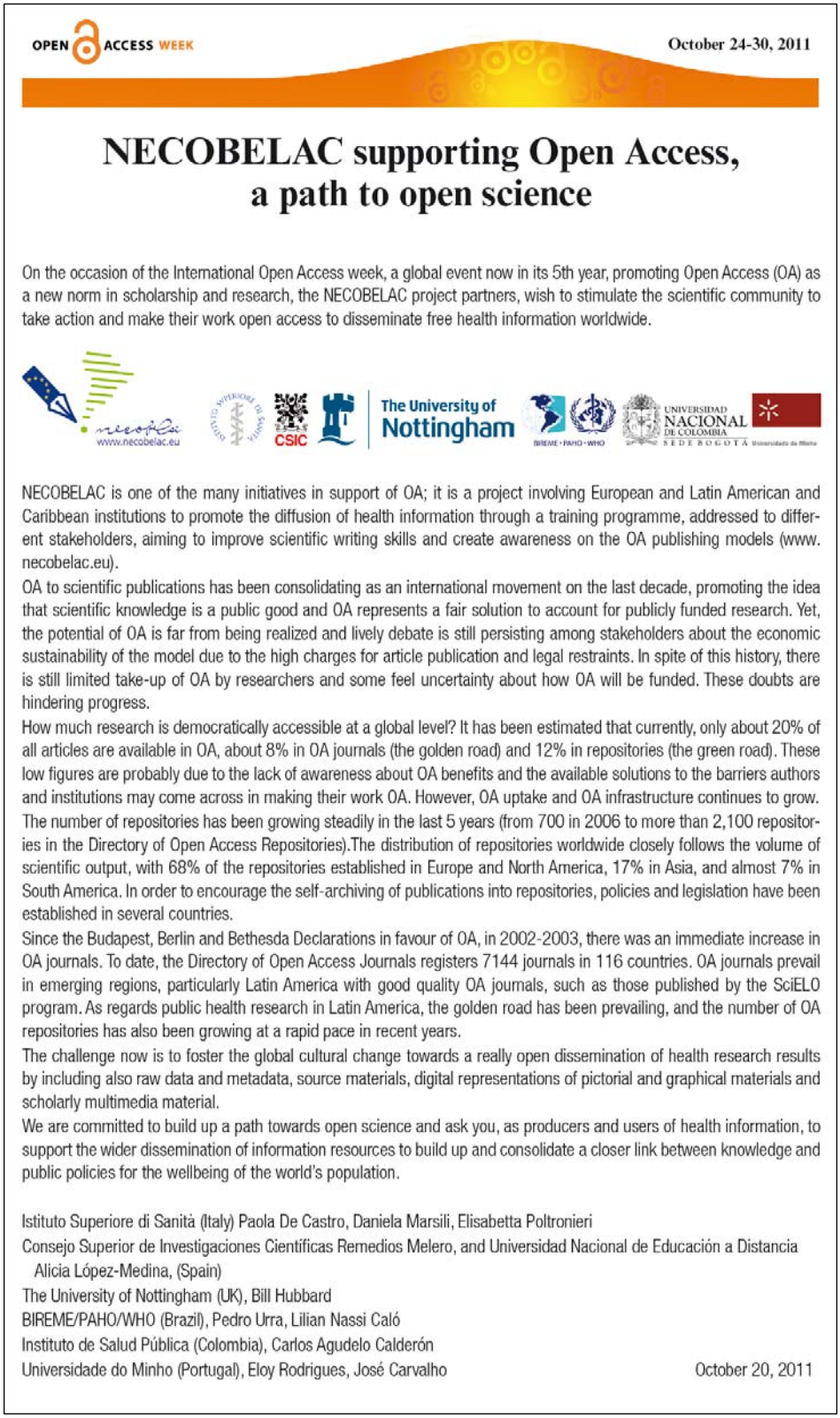
Participants on the NECOBELAC training courses commit themselves to replicating the training experience in the institutions of their countries. NECOBELAC project partners commit themselves to providing advice and tools to achieve the above mentioned objectives.

To effectively carry out this project of activity and help transform the models of disseminating knowledge and information in public health, the support and cooperation of the European and Latin American and Caribbean governments and institutions are required, to act in favour of the global development of knowledge.

Bogotà, November 11, 2010

The NECOBELAC Bogotá Declaration is approved by all partners of the European project NECOBELAC and signed by the participants of the NECOBELAC training course for trainers in Bogotá (November 9-11, 2010) coming from instituions of Argentina, Chile, Colombia, Cuba, Ecuador, Mexico and Peru and by the NECOBELAC partners attending this Course.
Participants on the previous NECOBELAC training courses held in São Paulo (Brasil, April 13-15, 2010) and in Rome (Italy, October 18-20, 2010) can adhere to this Declaration.

Figure D1. Bogotá declaration (2010)



OPEN ACCESS WEEK October 24-30, 2011

NECOBELAC supporting Open Access, a path to open science

On the occasion of the International Open Access week, a global event now in its 5th year, promoting Open Access (OA) as a new norm in scholarship and research, the NECOBELAC project partners, wish to stimulate the scientific community to take action and make their work open access to disseminate free health information worldwide.

NECOBELAC is one of the many initiatives in support of OA; it is a project involving European and Latin American and Caribbean institutions to promote the diffusion of health information through a training programme, addressed to different stakeholders, aiming to improve scientific writing skills and create awareness on the OA publishing models (www.necobelac.eu).

OA to scientific publications has been consolidating as an international movement on the last decade, promoting the idea that scientific knowledge is a public good and OA represents a fair solution to account for publicly funded research. Yet, the potential of OA is far from being realized and lively debate is still persisting among stakeholders about the economic sustainability of the model due to the high charges for article publication and legal restraints. In spite of this history, there is still limited take-up of OA by researchers and some feel uncertainty about how OA will be funded. These doubts are hindering progress.

How much research is democratically accessible at a global level? It has been estimated that currently, only about 20% of all articles are available in OA, about 8% in OA journals (the golden road) and 12% in repositories (the green road). These low figures are probably due to the lack of awareness about OA benefits and the available solutions to the barriers authors and institutions may come across in making their work OA. However, OA uptake and OA infrastructure continues to grow. The number of repositories has been growing steadily in the last 5 years (from 700 in 2006 to more than 2,100 repositories in the Directory of Open Access Repositories).The distribution of repositories worldwide closely follows the volume of scientific output, with 68% of the repositories established in Europe and North America, 17% in Asia, and almost 7% in South America. In order to encourage the self-archiving of publications into repositories, policies and legislation have been established in several countries.

Since the Budapest, Berlin and Bethesda Declarations in favour of OA, in 2002-2003, there was an immediate increase in OA journals. To date, the Directory of Open Access Journals registers 7144 journals in 116 countries. OA journals prevail in emerging regions, particularly Latin America with good quality OA journals, such as those published by the SciELO program. As regards public health research in Latin America, the golden road has been prevailing, and the number of OA repositories has also been growing at a rapid pace in recent years.

The challenge now is to foster the global cultural change towards a really open dissemination of health research results by including also raw data and metadata, source materials, digital representations of pictorial and graphical materials and scholarly multimedia material.

We are committed to build up a path towards open science and ask you, as producers and users of health information, to support the wider dissemination of information resources to build up and consolidate a closer link between knowledge and public policies for the wellbeing of the world's population.

Istituto Superiore di Sanità (Italy) Paola De Castro, Daniela Marsili, Elisabetta Poltronieri
Consejo Superior de Investigaciones Cientificas Remedios Melero, and Universidad Nacional de Educación a Distancia Alicia López-Medina, (Spain)
The University of Nottingham (UK), Bill Hubbard
BIREME/PAHO/WHO (Brazil), Pedro Urra, Lilian Nassi Caló
Instituto de Salud Pública (Colombia), Carlos Agudelo Calderón
Universidade do Minho (Portugal), Eloy Rodrigues, José Carvalho

October 20, 2011

Figure D2. Editorial for the Open Access week 2011 published in different journals

APPENDIX E
Selected web sources from NECOBELAC topic maps

This Appendix includes selected web sources appearing in the NECOBELAC topic maps according to the main division: scientific publication and OA, even if many sources do apply to both divisions. The online version of the topic maps includes far more links to journal articles and other relevant sources.

The sources below are shown in alphabetic order, all links were last accessed in September 2012.

Scientific publication

American Association for the History of Medicine (AAHM). http://www.histmed.org/
American Medical Writers Association (AMWA). http://www.amwa.org
Association for Medical Education in Europe (AMEE). http://www.amee.org
Association of Earth Science Editors (AESE). http://www.aese.org
Association of Learned and Professional Society Publishers (ALPSP) - Hot topics: Editorial issues. http://www.alpsp.org/Ebusiness/Information/HotTopics/EditorialIssues.aspx
AuthorAID. http://www.authoraid.info
Board of Editors in the Life Sciences (BELS). http://www.bels.org
British Standards Institution (BSI). http://www.bsigroup.com
Canberra Society of Editors. http://www.editorscanberra.org
Committee On Publication Ethics (COPE). http://publicationethics.org
Copyediting: improve your copyediting skills. http://www.copyediting.com
Council for the Advancement of Scientific Writing (CASW). http://casw.org
Council of Editors of Learned Journals (CELJ). http://www.celj.org
Council of Science Editors (CSE). http://www.councilscienceeditors.org
Digital Curation Centre. http://www.dcc.ac.uk
Eastern Mediterranean Association of Medical Editors (EMAME). http://www.emro.who.int/EMAME
Editors' Association of Canada (EAC). http://www.editors.ca
EEI Communications: the publishing think tank. http://www.eeicom.com
EQUATOR Network. http://www.equator-network.org
ESCalate: Education Subject Centre of the Higher Education Academy Network. http://escalate.ac.uk
European Association for Research on Learning and Instruction (EARLI). http://www.earli.org
European Association of Health Information and Libraries (EAHIL). http://www.eahil.net
European Association of Science Editors (EASE). http://www.ease.org.uk
European Medical Writers Association (EMWA). http://www.emwa.org
Global Communication. http://www.intecom.org
International Association of Translation and Intercultural Studies (IATIS). http://www.iatis.org
International Committee of Medical Journal Editors (ICMJE). http://www.icmje.org
International Council for Science (ICSU). http://www.icsu.org
International Council for Scientific and Technical Information (ICSTI). http://www.icsti.org
International Network for the Availability of Scientific Publications (INASP). http://www.inasp.info
International Society for Medical Publication Professionals (ISMPP). http://www.ismpp.org
Latindex. http://www.latindex.unam.mx
Mediterranean Editors and Translators (MET). http://www.metmeetings.org
Publishers Association (PA). http://www.publishers.org.uk
Redalyc. Red de Revistas Científicas de América Latina y el Caribe, España y Portugal. http://redalyc.uaemex.mx
Scientific Electronic Library Online (SciELO). http://www.scielo.org
SPARC - Campus-based publishing resource center. http://www.arl.org/sparc/partnering
The Journal of Electronic Publishing (JEP). http://www.journalofelectronicpublishing.org
World Association of Medical Editors (WAME). http://www.wame.org

Open Access

Acceso Abierto a la Ciencia. http://www.accesoabierto.net
Acesso Aberto na Universidade de São Paulo (USP). http://www.acessoaberto.usp.br

Biblioteca Digital FCEN-UBA - SPARC Open Access Newsletter: Selección y traducción al español. http://digital.bl.fcen.uba.ar/gsdl-282/Peter_Suber.html#indice
Boston College Libraries Newsletter - Open access myths: busted! http://www.bc.edu/libraries/newsletter/2011spring/openaccess/index.html
Budapest Open Access Initiative http://www.soros.org/openaccess
Canadian Association of Research Libraries (CARL ABRC) - Open access [Video]. http://www.youtube.com/watch?v=y9Jh_GffRPU
Charles W. Bailey, Jr. Digital Scholarship. Open access publishing since 1989. http://www.digital-scholarship.org
Creative Commons. http://creativecommons.org
Digital Repository Infrastructure Vision for European Research (DRIVER). http://www.driver-support.eu
eIFL: Enabling access to knowledge in developing and transition countries. http://www.eifl.net
Enabling Open Scholarship (EOS). http://www.openscholarship.org
JISC- Open access. http://www.jisc.ac.uk/openaccess
LibGuides at University of the Witwatersrand - Open access resources. http://libguides.wits.ac.za/openaccess_a2k_scholarly_communication
LibGuides at University of the Witwatersrand - Open learning resources: definitions, myths and declarations. http://libguides.wits.ac.za/Open_Educational_Resources
OA Answers: Research communication strategy. http://rcsproject.wordpress.com/oa-answers
Open access and institutional repositories with EPrints. http://www.eprints.org
Open Access Directory (OAD).http://oad.simmons.edu/oadwiki
Open Access Scholarly Information Sourcebook (OASIS). http://www.openoasis.org
Open Access Scholarly Publishers Association (OASPA). http://www.oaspa.org
Open Archives Initiative (OAI). http://www.openarchives.org
Openaccess.se - Scholarly Publishing. http://www.kb.se/OpenAccess/Hjalptexter/English
OpenAIRE: Open Access Infrastructure for Research in Europe. http://www.openaire.eu
OpenDOAR - Directory of Open Access Repositories. http://www.opendoar.org
Public Knowledge Project (PKP). http://pkp.sfu.ca
Scholarly Publishing and Academic Resources Coalition (SPARC). http://www.arl.org/sparc
SHERPA. http://www.sherpa.ac.uk
SPARC - Campus-based open-access publishing funds: a practical guide to design and implementation. http://www.arl.org/sparc/openaccess/funds/guide.shtml
Sparky Award Winners: a contest to promote the open exchange of information. http://www.sparkyawards.org/entries
SURF Foundation. http://www.surffoundation.nl/en
The Open Citation Project (Opcit). http://opcit.eprints.org
The open-access.net platform. http://open-access.net/de_en
UK Open Access Implementation Group. http://open-access.org.uk
United Nations Educational, Scientific and Cultural Organization (UNESCO) - Global open access portal. http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/?mid=51

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