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OPEN ACCESS: HOW TO INCREASE VISIBILITY AND IMPACT OF RESEARCH IN BOSNIA AND HERZEGOVINA

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Abstract

This article talks about open access of scientific publications, creation of OA journals and OA repositories through examples from Bosnia and Herzegovina. With the explanation what is Open Access and how to provide it, the paper gives instructions on how to create an institutional OA repository in nine steps, as well as to read Open Access policy.

Key words: Open access (OA), providing open access, B&H, OA journals, repositories, creating institutional open access repository, Open Access Policy

Introduction and benefits

Open approaches to scholarship are changing the way research and learning are done and there are profound implications for universities and research institutions. There is an increasing interest from governments, funders and the research community itself in opening up the way research is carried out and communicated. This interest is complemented by new research practices and processes that can work effectively only in an open, collaborative environment.

Open access seeks to remove price and permission barriers that prevent knowledge from being shared. There are significant economic, social and educational benefits to making research output openly available without financial, legal and technical barriers to access. Open access benefits researchers, institutions, nations and society as a whole providing the following opportunities to major stakeholders:

- Researchers benefit from the increased visibility, usage and impact for their work;
- Universities and other research institutions also benefit from the increased visibility and presence on the Web as well as from the increased impact for research. The open access collection in the repository forms a complete record of the research output of the institution in easily accessible form, provides the means for the institution to manage its research programmes more effectively and to measure and assess its research programmes.
- Publishers benefit from the increased readership and, with that, increased citations, and maximum visibility and impact for a journal's contents; providing the best possible dissemination service for research;
- Policy makers and research managers benefit from the new tools to manage institutions impact and to publicise institutions' research strengths that provide maximum return on research investment.

Open access literature is digital, online, free of charge, and free of most copyright and licensing restrictions. Open access is compatible with copyright, peer review, revenue (and profit), print, preservation, prestige, career-advancement, indexing, and other features and supportive services associated with conventional scholarly literature. [1]

By "open access" to literature, we mean its permanent 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. [2]

In May 2016, the EU Council adopted conclusions on the transition towards an open science system. [3] An important aspect of open science is a move towards open access to research results funded with public money. Facilitating access to those results encourages the re-use of research output. It is now widely recognized that making research results more accessible to all societal actors contributes to better and more efficient science, and to innovation in the public and private sectors.

Open access is also one of the constituent parts of Responsible Research and Innovation, strongly emphasized in Horizon 2020. In July 2012 the European Commission recommended that Member States develop national policies that will provide open access to publicly funded research and that research funders and research performing organizations accordingly develop their own policies, coordinated at the national and European level. [4] Furthermore, open access is required (mandatory) for all peer-reviewed publications resulting from Horizon 2020 funding. [5] Horizon 2020 also includes a pilot action on Open Access to research data. [6] Open Access to research data is a topic that is receiving increased attention recently and for which policies are still at a relatively early stage.

How to provide open access

To achieve open access to scholarly literature, there are two complementary strategies.

I. Open access journals. Journals that use a funding model that does not charge readers or their institutions for access (subscription or access fees). Users can read, download, copy, distribute, print, search, or link to the full texts of the journal articles. These journals do no longer invoke copyright to restrict access to and use of the material they publish. Instead they use copyright and other tools to ensure permanent open access to all the articles they publish.

The Directory of Open Access Journals lists 9,517 open access scientific and scholarly journals – free, full text and quality controlled. [7] And there are 15 journals from Bosnia and Herzegovina listed there. [8]

II. Open access repositories. Open access repositories (archives/digital repositories) contain research output, not only refereed journal articles published in subscription based and open access journals, but also theses and dissertations, unpublished reports and working papers, conference and workshop papers, books, chapters and sections, multi-media and audio-visual material, learning objects, datasets, software, patents, etc. They might be institutional or thematic. When these repositories conform to standards created by the Open Archives Initiative [9] they are interoperable, forming a global research facility. Common metadata protocol allows other web applications, such as text and data mining. Scholars and students deposit their research outputs in open repositories – a practice commonly called self-archiving.

Directory of Open Access Repositories lists 3,291 open access repositories [10] and there are 4,365 open access repositories in the Registry of Open Access Repositories. [11] There are three repositories from Bosnia and Herzegovina listed there: PHAIDRA (Permanent Hosting, Archiving and Indexing of Digital Resources and Assets) of the University of Tuzla [12] with E-theses collection of doctoral dissertations [13] and International Burch University repository. [14] And there is also PHAIDRA (Permanent Hosting, Archiving and Indexing of Digital Resources and Assets) of the University of Sarajevo. [15] But there are more universities and research performing organizations in the country that could benefit from having open access repositories in place.

Institutions can mandate open access, speeding the development. The growing number of research funders and research performing organizations implement open access policies and major research institutions are increasingly adopting mandatory open access policies, thus effectively making open access the standard way of communicating research.

834 universities, research funding agencies and research institutions adopted open access policies [16], two-thirds of which are universities and research institutions and more than half of them are in Europe.

Free and open source software is used to set up the repositories and institutions benefit from free technical support for installation and use. There are low installation and maintenance costs, repositories are quick to set up and gain benefits. And repositories provide usage statistics showing global interest and value of institutional research.

A number of studies have now been carried out on the effect of open access on citations to articles, showing the increased citation impact that open access can bring [17]. Open access repositories also provide an excellent means for researchers to boost their online presence and raise their profile.

Open access repository can also be a useful tool in day-to-day research management activities. Once research outputs are stored in the repository, research administrators and managers can use them as the definitive source of information for promotion panels and appraisals. It is part of a network, both formal and informal.

Libraries partner with researchers and research managers to set up open access repositories, to curate open research data and to develop open access policies; they partner with scholarly publishers to publish open access journals and books ensuring the quality of digital content, its reuse and sharing.

How to set up an institutional open access repository in nine steps

1. **Set up an Open Access Working Group** that undertakes the high level management of an open access repository on behalf of the University. Involve key stakeholders: senior management, academic staff and PhD students, library staff, technical support staff. This group should include five-ten people who are interested to contribute.

The Open Access Working Group will have to identify the open access repository vision and initial goals, the target content and the structure.

To decide about the vision and initial goals, see below a list of purposes and benefits of an open access repository for a University:

- Opens up the outputs of the university to the world
- Maximizes the visibility and impact of these outputs as a result
- Showcases the university to interested constituencies – prospective staff, prospective students and other stakeholders
- Collects and curates digital outputs
- Manages and measures research and teaching activities
- Provides a workspace for work-in-progress, and for collaborative or large-scale projects
- Enables and encourages interdisciplinary approaches to research
- Facilitates the development and sharing of digital teaching materials and aids
- Supports student endeavours, providing access to theses and dissertations and a location for the development of e-portfolios.

2. **Assign a repository project leader/manager and identify members to form part of the implementation team** (e.g. librarians, etc.). This person will manages the 'human' side of the repository including content policies, advocacy, user training and a liaison with the departments, etc.

3. **Identify one to four champions at the faculty/ PhD students to work with** initially. Involve them in your meetings and make them part of the implementation team.

4. **Think about hardware, software and repository administrator.** If you decide to host your open access repository**,** you will need a server/ some space on a server and a repository administrator – who will manage the technical implementation, customisation and management of repository software, manage metadata fields and quality, create usage reports and track preservation issues. If you need advice on the software choice, the most popular free and open source software nowadays is DSpace. [18]

5. **Define your open access repository policy**. The implementation team and the Open Access Working Group will also have to discuss the open access repository policy that will include the following:
   - Content policy defining the type of content that will be stored in your repository;
   - Submission policy defining the policy for getting content into the repository;
   - Data re-use policies: how the content in your repository can be used by others;
   - Preservation policy: how you define the preservation approach for your repository;
   - Take-down policy: how to deal with disputes over items that have been submitted.

6. **Choose the name for your open access repository**.

7. **Define roles and responsibilities in managing the repository and the workflows** (will depend on your choice of the software).

8. **Think about statistics and management reports** that you would like to generate from your repository (will again depend on your choice of the software).

9. **Define the content that should be deposited mandatory and the optional content (your open access policy), think about licensing and copyright issues**. To address licensing and copyright issues, a comprehensive deposit and end user's license agreement should be developed to cover a number of core topics, including a depositor's declaration; the repository's rights and responsibilities; and the end-user's terms and conditions.

How to design your open access policy

The formal adoption of open access through an institutional policy allows institutions to become part of the evolving research and academic ecosystem where access to research is immediate and open to the benefit of both researchers and society at large.

An institution and its researchers may expect multiple benefits from the implementation of an efficient open access policy:

The Institution:

- Collects and preserves its scientific output and disseminates it through its repository.

- Provides the possibility of indexing and tracking the scientific output of the institution from international search engines on the internet, like Google etc.
- Monitors the number of visits and use and collects data and indicators that can be used in institutional planning, and the search for sources of funding etc.
- Provides opportunities for the use and re-use of the institution's output for scientific purposes (CVs, publications, excellence reports, indicators, institutional websites, personal websites etc.)
- Strengthens international communication and collaboration channels and the institution's international profile

The researchers:

- Increase the visibility of their research and their citations
- Increase the usage of their research
- Increase the impact of their research
- Obtain a permanent link for each of their research outputs

Successful open access policies are mandatory and require immediate deposit of the author's (or publisher's where allowed) version of the publication in the repository at the time of acceptance for publication and deposit is linked to research evaluation. The policy stipulates that depositing the publications in the repository cannot be waived. Finally, the policy requires immediate open access to research articles wherever possible, but permits an embargo on open access itself (that is, the full-text of the deposited articles may be kept closed off) for up to six months in Science, Technology, Engineering and Medicine disciplines or up to 12 months for the Social Sciences and Humanities. In this case, article metadata (bibliographic details) will be made immediately available as these details cannot be subject to embargo. These bibliographic details will be indexed by web search engines, making the article discoverable even during the period of embargo on the full text of the document. In the case of monographs the policy requires access to the bibliographic metadata and encourages researchers to provide open access taking into consideration the restrictions set by the publisher. [19]

Model Open Access Policy [20]

OPEN ACCESS POLICY OF [NAME OF INSTITUTION]

[Name of Institution] adopts an Open Access Policy based on the following principles

Article 1

General Principles

1. **[Name of the Institution]** Open Access policy aims at providing free online access to the outputs of publicly funded research supported.
2. Open Access to scientific results is based on the recognition of knowledge as a public good and the social and economic benefits derived.
3. The efficient and wide dissemination of scientific outputs constitutes a significant part of the **[Name of the Institution]** role as a public research organization.
4. The increase in the visibility of the scientific outputs resulting from Open Access leads to an increase of the impact of publications.
5. Deposit in the institutional repository ensures curation, long-term preservation, and further dissemination of the scientific output of **[Name of the Institution]** and access to them for the conduct of internal and external evaluation.

Article 2

Definitions

- A **Publication** is defined as the peer-reviewed published (or under publication) work of researchers based in the institution (indicatively this comprises articles, monographs, book chapters, reports, conference presentations).
- A **Researcher** is any member of the research staff of **[name of the Institution],** of all levels and irrespective of their employment status.
- An **Institutional Open Access Repository** is **[name of the Repository]** established at **[name of the Institution]** according to international standards, containing digital content from various disciplines and providing advanced tools for search, navigation and Open Access to its digital collections.
- A **Digital copy** is the electronic copy of the publication in its final stage (either the author's final manuscript after peer review or the publisher's version).
- **Research Data** is the data (such as statistics, results of experiments, measurements, observations, interview recordings, images, etc.) used to validate the results presented in scientific publications.
- An **Embargo** is the period during which a publication can be 'closed' while deposited in the repository (i.e. the publication is not openly available).

- **Metadata** are the descriptors used for describing, tracing, use and management of the deposited item (indicatively: title of publication, author(s), institutional affiliation, name of journal where the publication has been accepted).
- **A suitable Repository** is one that provides Open Access to scientific results, enables citation through permanent identifiers (DOI or other) and provides qualitative metadata (including acknowledgment of research funding) based on accepted guidelines and standards.

Article 3

Policy

From **[date] [name of the Institution]**:

1. Requires its researchers to deposit in the institutional repository a digital copy of the full text, as well as the related metadata of all publications (author final manuscript of publisher version) upon acceptance for publication. Researchers are held responsible for the timely deposit of their publications in the institutional repository.
2. Requires the full text of all publications referred to in 1 to be made openly available upon deposit or as soon as possible following deposit. In all cases, metadata should be openly accessible. For peer-reviewed publications, the deposited item can remain closed for up to six months (or for up to 12 months for publications in the social sciences and humanities). For monographs deposit referred to in 1.B remains mandatory, but access is closed until publisher embargo elapses.
3. Requires the deposit of the abstract of the publication to be made openly accessible in the case of "closed" publications with the aim to increase their visibility.
4. For purposes of individual or institutional evaluation of the research output of the institution and its members, **[name of the institution]** will only consider as publications those whose metadata and full texts are deposited in the institutional repository according to the requirements stated above.
5. Encourages researchers to deposit the research data supporting their publications in the institutional repository or in any other suitable Open Access Data repository.
6. Encourages its members to retain ownership of copyright and to licence to publishers only those rights necessary for publication. This is possible through the use of addenda to the publishing contract. Templates are available at www.sparc.arl.org/resources/authors/addendum and http://copyrighttoolbox.surf.nl/copyrighttoolbox/index.html
7. Encourages researchers to deposit in the institutional repository publications authored prior to the date of effect of the current policy and make them openly accessible whenever possible.

Article 4

Support and Monitoring of the Open Access Policy

[Name of the institution]

1. Enables the adoption of Open Access through the organization of seminars, events, awareness-raising actions, and education and training on Open Access issues.
2. Monitors policy compliance by comparing the content of the repository with information gathered from indexing services and through data on the use (access and downloads) per publication/ department/unit/ institute etc.
3. Provides the necessary human resources and the required infrastructure for the support of the Open Access policy.
4. Provides links and interoperability with other databases like Google Scholar.

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OTVORENI PRISTUP: KAKO POVEĆATI VIDLJIVOST I UTICAJ ISTRAŽIVANJA U BOSNI I HERCEGOVINI

Sažetak

Ovaj rad govori o slobodnom pristupu naučnoj građi, kreiranju OA časopisa i OA repozitorija kroz primjere iz Bosne i Hercegovine. Uz objašnjenje šta je slobodan pristup i kako ga obezbjediti, u radu se daju upute kako kreirati institucionalni OA repozitorij u devet koraka, te se može vidjeti i polisa slobodnog pristupa.

Ključne riječi: Slobodan pristup (OA), obezbjeđivanje otvorenog pristupa, BiH, OA časopisi, OA repozitoriji, kreiranje institucionalnog OA repozitorija, Polisa slobodnog pristupa