

Open access: how to ensure systematic searching?

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Abstract

Open access publications are free for everyone to read and download without financial, legal or technical barriers. Various political approaches support the increasing tendency for open access publishing. Due to increasing availability of open access articles, there is a need for systematic search options related to this publication model in databases. As there are various options for searching specifically open access publications, it is important to know which sources are included in a database. This brief communication provides an overview of databases with regard to options for searching open access content in a systematic way.

Key words: open access; literature search; systematic review.

Brief communication

Open access publications are free for everyone to read and download without financial, legal or technical barriers (1). Their number has continuously risen within the last ten years across scientific disciplines, except with a decline in 2018. In medical related research fields such as health sciences and clinical medicine, the proportion of open access publications is almost 50 percent as shown by an analysis using Scopus and Unpaywall data (2). Various political approaches support the increasing tendency for open access publishing. One approach is Plan S, an initiative adopted by cOAlition S, an international consortium consisting of research funders, the European Research Council and the European Commission. Plan S stipulates that from 2021 onwards all publicly-funded projects have to be published in a freely accessible form (3). The aim is to make every publication immediately freely accessible, for example in an open access journal ("Golden Route") or in a journal where some articles are openly available for a publication fee paid by the author, while other articles remain subscription-based ("Hybrid Model"). According to the open access strategy for Switzerland, by 2024 all publicly funded publications must be freely accessible (4). In contrast to Plan S, the strategy allows therefore the "Golden Route" and

"Hybrid Model" as well as the "Green Route" (free availability through a repository, sometimes after an embargo period). The "Green Route" is the publication format that was chosen most often by researchers (2). How open access strategies like Plan S will be implemented depends on national initiatives. One example of such an initiative is the German DEAL project launched by the German Rectors' Conference in order to conclude uniform nationwide licensing agreements with scientific publishers. Concrete negotiating goals include open access for all publications from German institutions and an appropriate financing model (4).

Due to increasing availability of open access articles, there is a need for systematic database searching options concerning this publication model in databases. It is possible to distinguish between databases with free availability of all content and others with only partial accessibility and targeted search options for open access publications. *Table 1* provides an overview of databases and library catalogues with regard to this distinction.

As *Table 1* shows, there are various options for searching specifically open access publications using genuine open access databases such as DOAJ or DOAB and databases with an integrated open access filter that can be applied during the search process.

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Genuine open access databases

Directory of Open Access Journals (DOAJ)	doaj.org
Directory of Open Access Books (DOAB)	doabooks.org
Campbell Library	campbellcollaboration.org/library.html
Social Science Open Access Repository (SSOAR)	gesis.org/ssoar

Databases with an open access filter

Bielefeld Academic Search Engine (BASE)	base-search.net
bibnet.org	bibnet.org
Epistemonikos	epistemonikos.org
LIVIVO	livivo.de
MEDLINE via PubMed	ncbi.nlm.nih.gov/pubmed/
PsycINFO via Ovid, Scopus, Web of Science Core Collection	depends on institutional subscription

Note: Convenience sample, February 2020.

Table 1. Overview of databases and library catalogues with full open access or open access filter

Therefore, it is important to know which sources are included in a database. For example, around 12000 internationally available peer-reviewed open access journals are listed in DOAJ, a genuine open access database covering all areas of science, technology, medicine, social science and humanities. However, for regular databases with an open access filter such as Epistemonikos, MEDLINE or Web of Science Core Collection, there is no information available on the quality of open access filters such as sensitivity or precision.

The identification of open access publication might be indicated when (i) conducting an orienting search to discover a (new) research field, (ii) working on bibliometric analyses or (iii) when the aim is to analyse methodological or thematical issues in open access publications (5-7).

Currently, we recommend that the approach to systematically identify open access publications should be guided by the aim and the quality requirements of the search as well as the resources available. For example, when intending a comprehensive literature search as part of a systematic review to identify as many relevant publications as possible, searching only open access publications is absolutely counterproductive. In the future, validated open access filters for various databases and library catalogues would be desirable.

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Competing interests

The authors declare that there is no competing interest.

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