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OPEN SCIENCE AND INFORMATION RETRIEVAL

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OPEN SCIENCE

How to get started?



ABOUT OPEN SCIENCE

- »» According to Unesco (2021; 2023), Open Science is about making science more accessible, inclusive and equitable for the benefit of all
 - »» In Finland, open science is divided into four areas:
 - »» Culture of open scholarship
 - »» Open data
 - »» Open access
 - »» Open education
- (Secretariat for the National Open Science and Research Coordination 2023)



MAIN AREAS OF OPEN SCIENCE

- » Open Access
 - » Publishing research results in an open way, and making them usable and accessible
- » Open Data
 - » Making research data public as widely as possible and making it reusable as FAIR Data
- » Open Research Software
 - » Making research software developed in research projects publicly available and reusable, usually as Open Source with appropriate licensing.
- » Open Educational Resources
 - » Using free and open materials for education and in teaching, and making them available
- » Open Methodology
 - » Documenting the use of methods as well as the entire process behind them, if this is practicable and relevant
- » Open Peer Review
 - » Transparent and replicable quality assurance through Open Peer Review



WHY OPEN SCIENCE

- » Speeds up research progress
- » Increases trust in research results
- » Raises efficiency, avoids wastage of resources
- » Reduces inequality, also in access to science
- » Makes publicly funded research publicly available
(ZBW 2023)



BENEFITS FOR THE INDIVIDUAL

- » Compliance with funding guidelines
 - » Research organizations are increasingly requiring the use of Open Science practices.
- » Greater visibility of scholarly work
 - » there is evidence that Open Science can lead to higher citation rates, as well as to a greater visibility outside the (own) research community.
- » Greater impact and promotion of knowledge transfer
 - » Open Access offers the potential to apply results more easily in practice.
- » More options for publication and more control
 - » Open Science provides new opportunities and more control over how and where one's work is published.
- » Facilitating feedback
- » Open Science can make it easier to get constructive feedback on research work and thus improve its quality.
(ZBW 2023)



HOW TO GET STARTED

- » Meet the Open Science policies of your institution and your research funding agencies. These may include policies for Open Access, Open Data, and for research data management.
- » Create an [ORCID ID](#) for yourself. This will ensure the correct assignment and better findability of your research work and thus support your visibility.
- » Make sure that as much of your research as possible is assigned a Digital Object Identifier (DOI), including your research data, for example. This will make them easier to find, cite, and re-use.
- » Get an overview of Open Access journals in your specialist subject. The Directory of Open Access journals can be useful here. Publish in Open Access whenever possible and remember LUT's APC coverage
- » Consider which parts of your research process you can open. Check out the six main areas of Open Science, start with the easiest part, and give it a try!
(ZBW 2023)



OPENING UP YOUR RESEARCH

- » Open Access
 - » Publish research results in an open way, and make them usable and accessible
 - Beware of predators!
- » Open Data
 - » Make research data as public as possible and available for others to reuse
- » Open Educational Resources
 - » Use free and open materials for education and in teaching, and make them available yourself
- » Open Methodology
 - » Document the use of methods as well as the entire process behind them, if this is practicable and relevant
- » Open Source
 - » Use open-source technologies (hardware and software) and open up your own technologies
- » Open Peer Review
 - » Transparent and replicable quality assurance through Open Peer Review

(ZBW 2023)

OPEN SCIENCE IN LUT

- » LUT University has signed the national [Declaration for Open Science and Research 2020-2025](#)
- » In developing its open science practices, LUT utilizes the national [Policies of open science and research in Finland](#), which outline in detail the strategic principles, objectives and action plans necessary to achieve the objectives set out in the Declaration for Open Science and Research
- » [The Open Science and Research Policy for LUT Universities](#) outline the actions by which openness is supported and promoted within LUT University
- » LUT University's own [research data policy](#) describes the principles and outlines of collecting, storing, using and managing research data at the university.



LUT OPEN SCIENCE TOOLS

- » [DMPTuuli](#) – making data management plans, including organizational and funder related templates
- » [Research data management in LUT Universities](#) –guide
- » [Open access publishing with APC](#) –guide
- » [LUT guide to publishing](#) –guide
- » [LUTPub](#) – parallel publishing, research data publishing
- » [LUT Research Portal](#) – ORCID compatibility

SOURCES

- » Secretariat for the National Open Science and Research Coordination. 2023. What is open science? Cited 20.3.2023. Available at: <https://avointiede.fi/en/what-open-science>
- » Unesco. 2023. Open science. Cited 20.3.2023. Available at: <https://www.unesco.org/en/open-science>
- » Unesco. 2021. UNESCO Recommendation on Open Science. UNESDOC digital library. Cited 20.3.2023. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000379949>
- » ZBW. 2023. Open Science. Open economics guide. Available at: <https://openeconomics.zbw.eu/en/knowledgebase/introduction-to-open-science/>



INFORMATION RETRIEVAL



CHALLENGES IN INFORMATION RETRIEVAL

The main problems in information retrieval are

- »» Finding suitable search terms
- »» Limiting the search result
- »» Finding suitable information sources
- »» Finding the right kind of information



HOW TO COME UP WITH SEARCH TERMS?

- » the research question helps you to bring out the essentials of your assignment
- » after the research question has been formulated, you can start asking questions for information searching
 - » what do you know about the subject already?
 - » what is your field or context?
 - » what methodology you are using?
 - » etc.
- » use dictionaries and thesauruses to find suitable terms
- » write down the terms you come up with, including acronyms and synonyms
- » come up with broader or narrower terms (water, waste water, sewage)
- » when discovering something useful, see the keywords for further searches
- » please note that different fields of science have different views and may use different terminology

HOW TO MAKE THE MOST OF YOUR SEARCH TERMS

- » Truncate using *
 - » energ* -> energy, energetic, energy-efficiency..
 - » generat* -> generator, generatrix, generation..
- » Combine words as phrases using quotation marks
"solar power" | "energy consumption" | "sustainable development"
- » Search with optional terms using OR operator
 - (solar OR wind OR water) power*
- » Use the refining options available in databases like publishing year or publication type
- » Direct your search term to be found in a certain field like title, abstract, keywords



MAKING SEARCHES

How and where?



LUT PRIMO – PRIMO.LUT.FI

- Sign in using LUT username and password (LUT HAKA login)
- After the initial search, you can narrow down your search results using the right-hand side menu (like peer reviewed journals, publication date)
- Basic search covers both printed and digital collections
- Separate searches for finding databases and journals
- Read more: https://libguides.lut.fi/primo_eng



SCOPUS AND WEB OF SCIENCE

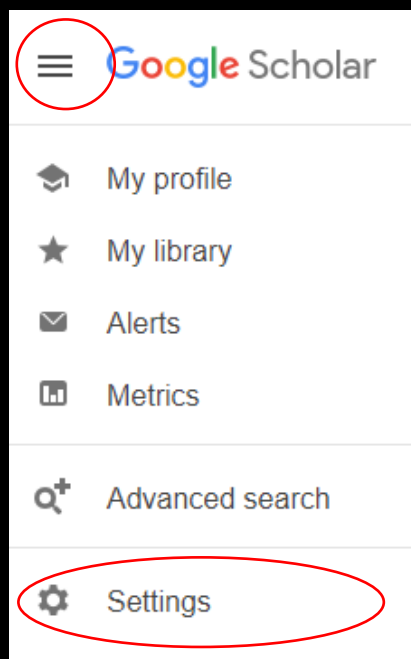
- databases showing article information, citations and publishing profiles for authors and journals
- possibility to direct the search to a certain field or browse the most prestige journals
- does not contain full text articles but offers links to library databases



GOOGLE SCHOLAR

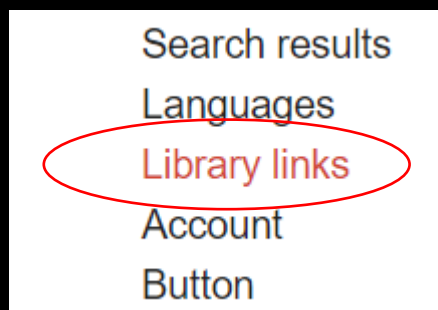
- more scientific version of Google, especially good for first searches and finding search terms
- contains journal articles, but also thesis and white papers
- lot of paywalled content, LUT Primo can be linked to get full text access when applicable

ADDING LUT PRIMO LINKS TO GOOGLE SCHOLAR



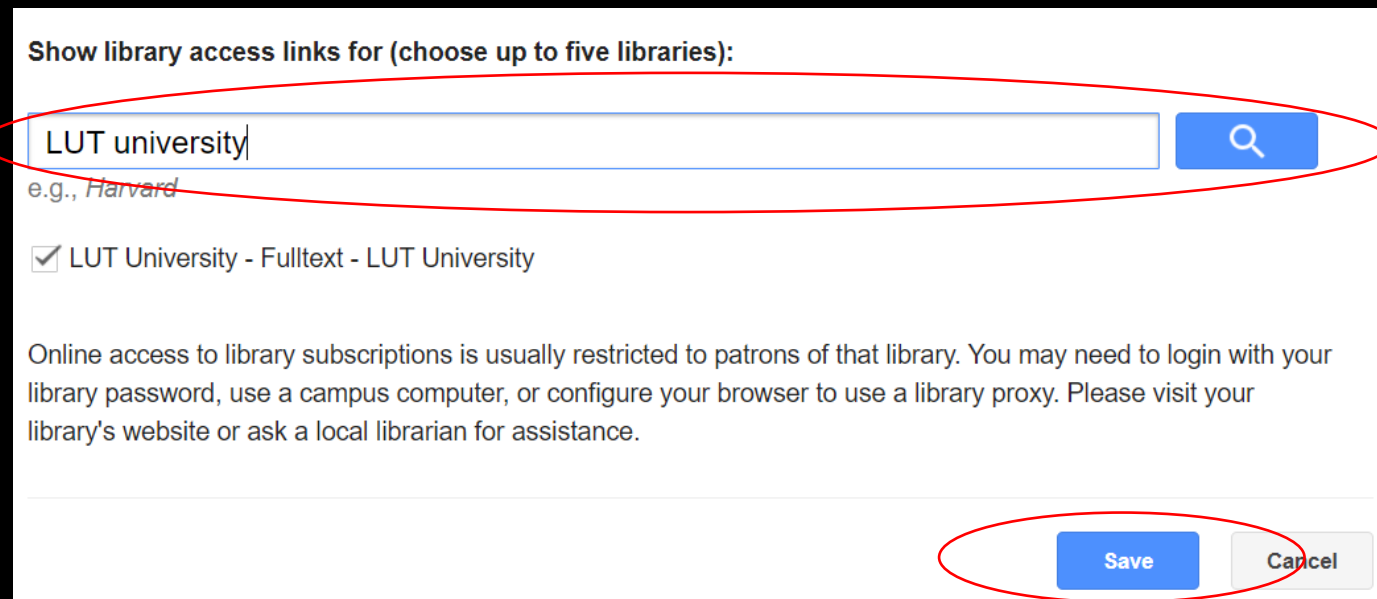
Google Scholar

- My profile
- My library
- Alerts
- Metrics
- Advanced search
- Settings



Search results

- Languages
- Library links
- Account
- Button



Show library access links for (choose up to five libraries):

LUT university

e.g., Harvard

LUT University - Fulltext - LUT University

Online access to library subscriptions is usually restricted to patrons of that library. You may need to login with your library password, use a campus computer, or configure your browser to use a library proxy. Please visit your library's website or ask a local librarian for assistance.

Save Cancel

GOOGLE SCHOLAR TIPS

Open to influence: what counts as academic influence in scholarly networked *Twitter* participation

B Stewart - *Learning, Media and Technology*, 2015 - Taylor & Francis

Within the academy, signals of a scholar's academic influence are made manifest in indices like the h-index, which rank output. In open scholarly networks, however, signals of influence are less codified, and the ways in which they are enacted and understood have yet to be ...

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Articles

Open to influence: what counts as academic influence in scholarly networked *Twitter* participation

Bonnie Stewart

Pages 287-309 | Received 18 Jul 2014, Accepted 26 Jan 2015, Published online: 09 Mar 2015

Download citation <https://doi.org/10.1080/17439884.2015.1015547> Check for updates

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Abstract

Within the academy, signals of a scholar's academic influence are made manifest in indices like the h-index,

Login options

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Restore content access

- > Restore content access for purchases made as guest

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Article Purchase

24 hours to view or download: USD 43.00

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OPEN TO INFLUENCE: WHAT COUNTS AS ACADEMIC INFLUENCE IN SCHOLARLY NETWORKED TWITTER PARTICIPATION

Bonnie Stewart

Stewart, B. (2015). Open to influence: What counts as academic influence in scholarly networked Twitter participation. *Learning, Media, and Technology*, 40(3), 1-23. doi: [10.1080/17439884.2015.1015547](https://doi.org/10.1080/17439884.2015.1015547)



CITING AND COPYRIGHTS



WHAT ARE CITATION MANAGERS?

- » Using citation manager, you can collect, organize, share, and cite sources that you find
- » You can add all types of sources to a citation manager—like articles, books, interviews, videos, and more.
- » Many citation managers offer plugins or extensions so you can quickly add sources from library databases, catalogs, and websites from within a browser.
- » Once you have sources added, you can then organize them within the citation manager using tags, lists, and folders.
- » Then, with the click of a button, you can add those sources as citations within your paper, and at the end of your paper, generate a reference list automatically.



ABOUT USING CITATION MANAGERS

- citation managers are a good help, but using them requires commitment and readiness to modify the data when necessary
- it's possible to swap between citation managing softwares, but there might be loss of data, especially user added info like tags and keywords



REFWORKS

- citation manager
 - online database
 - offline version to be used with Word
- importing references from LUT Primo and most databases
- supports thousands of citations styles, including LUT institutional style
- using with Word allows you to add citations and get automatically created bibliography based on citations added
- video on using Refworks: <https://echo360.org.uk/media/250d74b1-860c-4e2d-883b-1935501dc5d3/public>




WRITING CITATIONS MANUALLY

- databases, like LUT Primo and Google Scholar offers citation examples according to a selected citation style, but they usually need modifying
- cross checking citations and bibliography requires precision and accuracy
- making and editing bibliography is in your own hands (for better or worse)

