Online Literature Search for Research Projects*

Santosh C. Hulagabali
Librarian, Nagindas Khandwala College, Malad (W), Mumbai-400064
E-mail: santosh@nkc.ac.in

A qualitative research work relies more on scholarly information which is authentic, reliable, relevant and scholarly. Such scholarly information is produced by the academicians, researchers, academic institutes, publishers, professional bodies etc. In an era of exponential growth of information, tapping the right, relevant and qualitative information is a big challenge. Moreover, there is a rampant growth in the use of online resources in teaching, research and publication activities. To address it, this chapter focuses specially on discovering the scholarly information online for conducting research projects/works qualitatively.

It is important that the researchers need to understand the beauty of searching online to retrieve the scholarly information. But searching online is an art as well as science. It is an *art* because a searcher needs to be creative in using different techniques and selecting right source of information. It is also *science* because some search techniques require certain formulas which are to be used to explore information (see Table-1).

There are many search discovery tools (like search engines, databases, OPACs etc. listed under the following heads) and techniques (or operators to retrieve the filtered, relevant information instantaneously). This chapter does not undermine the importance of libraries but specifically highlights the online tools and techniques with supporting examples. Based on the following pointers, researchers need to explore and use more number of similar tools for conducting their research work.

1. **Online Public Access Catalogue** (OPAC): Researchers need to start literature-search from their organizational library or any membership-based library (eg. British Council Library). To do so, they need to use OPAC effectively. It is an automated bibliographic list of entire collection of a particular library. The access to OPAC is available only to the patrons of a particular library. This not only help researchers save time as well as help prepare the list of bibliography on a particular domain.

2. **WebOPAC** (Web-based OPAC): The OPAC accessible on Internet (online) is called as WebOPAC. For instance: a researcher of University of Mumbai wants to know the collection of Indian Institute of Management, Ahmedabad

* Citation: Hulagabali, S. C. (2014). Online Literature Search for Researchers. In A. S. Luhar, M. S. Somani, & S. Mehta, *Research Methodology in Commerce.* Mumbai: Sheth Publishers Pvt. Ltd. pp. 74-82. ISBN: 978-93-5149-066-1.

(IIM-A). He/she logs on to IIM-A's Library catalogue (http://www.iimahd.ernet.in/library/) and searches it by author or title or subject. He/she can note the bibliographic details of the book and buy it or recommend it to his/her library or request the IIM-A Librarian to send the selected chapters of the book under document delivery service (DLL).

3. **Union Catalogues** (UCs): It is a catalogue of catalogues. WorldCat (www.worldcat.org), one of the largest UCs, has catalogues of around 72000 libraries of 170 countries. If the reader searchers for a required book in WorldCat, he/she get to know the name of the nearest library that has the required title in their library. The reader can then contact the Librarian or visit the Library.

4. **Search Engines** (SEs): SEs are the most popular online information discovery tools that allows searches for information within its index. There are many SEs available but Google has proved as one of the most accessed search engines globally. Google's selected products are also useful for the researchers (eg. Google Scholar, Google Alerts, Google Forms, Google Books etc. can be used effectively for research projects).

   Majority of the (re)searchers use SEs to search for information. But for an effective search on any SEs, the researchers need to have certain skills and techniques (see Table-1). Understating these skills and techniques or operators are crucial in any research activity as they help the researchers to 'refer good work and produce good work'.

   4.1. ***Search techniques:*** As discussed above, searching for right information on any SE is an art as well as science. This means a (re)searcher needs to have creative approach as well as scientific approach while searching for information especially on SEs. Following techniques/operators help researcher retrieve the filtered search results (Note: these techniques work well on Google).

Table-1: Online search techniques/operators

Search Operators	*Examples*	*Results*
Any of the word	growth OR development	Results are either related to growth or development or both
Phrase search	"impact of globalization on India"	Retrieves exact phrase from search results
Type of document	project management filetype:ppt	All results in ppt file format (try for filetype:pdf and

search		filetype:doc to retrieve information in pdf and document formats)
In URL search	Inurl:universal banking	URLs of results carry the search words/pharse
All in URL search	allinurl:trends in universal banking	URLs of results carries the exact phrase
In title	Intitle:accounting standards	Titles of results carries the exact words
All in title	allintitle:accounting standards of developed countries	Titles of results carry the exact phrase
Domain search	Teaching methods site:edu	*edu* stand for educational institute websites.
To know about a site	info:ugc.ac.in	Results about UGC
Define a word	Research define	It defines the term research
Search Tools	(A filtering feature available in Google)	Search Tools of Google helps search for information of a particular country, time series, relevancy and advance search results.

Also, researchers make it a point to explore the Advance Search features of any search engines or databases as to get more options to filter the results. For instance: Google's Advanced Search (http://www.google.com/advanced_search) gives lot of different search options. This helps customize a search query to get the filtered and relevant results.

5. **Special Search Engines** (SSEs): Mere SEs are not sufficient, so researchers need to work on the following SSEs to tap the apt information.

Table-2: Special search engines and their utilities

SSEs	*Description*	*URLs of SSEs*
Meta SEs	This is a 'search engine of search engines'. MSEs direct the user query to other SEs and display the results on its page. Eg. If a search for 'project management' is made in www.dogpile.com, the MSE brings results from Yahoo, Google and Yandex. Because, dogfile has tie-ups	www.mamma.com www.dogpile.com

	with the said SEs and retrieves required inform from their indexes. So researcher need not search the said SEs individually.	
Academic SEs	MSEs specifically contain scholarly information which help the academicians and researchers.	www.googlescholar.com www.academicsearch.com www.infomine.ucr.edu
Intelligent SEs	ISEs allow privacy of searchers, give relevant hits with less advertisements etc.	www.duckduckgo.com www.wolframalpa.com

6. **Video Search Engines** (VSEs): These help access the videos on any general subjects, be it academic, informative and recreational (eg. http://www.youtube.com). But the researchers, specially, need to access academic VSEs viz. Academic Earth (http://academicearth.org/) and TeacherTube (http://www.teachertube.com). These are useful for researchers to understand the ideas, flow of thought, presentation skills, new trends etc. of a speaker.

7. **Subject Directories** (SDs): These are created and maintained by the experts of a particular domain. Generally, SDs arrange contents by subjects and sub-subjects. Each indexed website is scrutinized by the SD's panel of experts before adding the link in the SDs. The popular SDs are http://www.yahoo.com and http://www.dmoz.org.

8. **Open Access (OA) Journals and Books:** OA means any information source or document available without any price-tag and copyright restrictions. The same can be shared, linked or copied for non-profit purposes. There is an increasing growth of OA sources online. Thousands of journal articles are available under OA mode. A search engine of OA journals i.e. http://www.oajse.com/ helps researchers access many OA journals and full-text articles.

Table-3: Open access journals and books

OA Sources	*Description*	*URLs*
Directory of Open Access Journals (DOAJ)	9927 journals and more than 16 lakh articles are accessible openly in almost every domain.	http://www.doaj.org
Research Papers in Economics	1.4 million research pieces from 1,800 journals and 3,800 working	http://repec.org/

(RePEc)	paper series (RePEc, 2014).	
JournalSeek	Database of freely available online journal information. It contains 102045 titles. Journal information includes the description, journal abbreviation, journal homepage link, subject category and ISSN (JournalSeek, 2014).	http://journalseek.net/
Directory of Open Access Books (DOAB)	A discovery service for peer reviewed books published under an open access license. DOAB provides a searchable index to the information about these books, with links to the full texts of the publications at the publisher's website or repository (DOAB, 2014).	http://www.doabooks.org/

9. **Open Educational Resources** (OERs):"Open Educational Resources are teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution" (UNESCO, 2014). Following are the popular OERs helpful for researchers in teaching, training and research activities.

Table-4: Open educational resources

OERs	*Description*	*URLs*
Sakshat	Initiatives by MHRD, Govt. of India. Documents openly available in different file formats. A project by MHRD	http://www.sakshat.ac.in
National Repository of OERs (NROER)		http://nroer.in/home
Project OSCAR	Downloadable web-based interactive learning objects	http://oscar.iitb.ac.in/oscarHome.do
Research Scope	Lecture series by PhD students of IIT Bombay	http://research.co-learn.in
MITs' OpenCourseWare	Open educational materials of 2150 courses	http://ocw.mit.edu

10. **Institutional Repositories** (IRs): This is an online archive of intellectual output of an academic or research institute or its faculty which is accessible openly or under restricted access. These IRs are built, using open source

software, by the information professionals of that institution. IRs are useful for the researchers in understanding the contribution of the institution, access to the archive of their publication, share etc. Though not all institutes build their IRs, but researchers need to look for the IRs (of different institutes) in their domain. Eg. For an IR in management subject, IIM-A (http://vslir.iimahd.ernet.in:8080/xmlui/) can be accessed. The resources like Annual reports, conference proceedings, papers, students' projects, thesis, working papers, videos etc. can be accessed by IIM-A's users. Even it provides free access to some selected documents to any user online. So researchers can try for locating such IRs of Indian (or international) premiere research institutes in their areas of study.

11. **Electronic Theses and Dissertations** (ETDs): These are the electronic version of theses and dissertations of doctoral degrees approved/awarded by the universities. The ETDs look like an OPAC and comprises full-text of theses and dissertations. There are many ETD repositories (national and international) available in OA domain. Researchers need to explore the foreign research institutes and universities for ETDs.

Table-5: Indian repositories of electronic theses and dissertations

ETDs	*Description*	*URL*
Shodhganga	Access to full-text theses and dissertations of PhD/MPhil awardees of Indian universities. INFLIBNET supported project.	http://shodhganga.inflibnet.ac.in
Vidyanidhi	Access to full-text theses and dissertations of PhD/MPhil awardees of Indian universities. An NDLTD supported project.	www.vidyanidhi.org
ShodhGangotri	Access to full-text research proposals (approved) of PhD/MPhil researchers of Indian universities	http://shodhgangotri inflibnet.ac.in

12. **Online Archives:** There are many archives of newspapers (eg. The newspapers from 2001 till date can be accessed on http://timesofindia.indiatimes.com/archive.cms); back issues of journals (eg. IGIIDR's Open Index Initiative http://202.54.18.153/prog/oii/newoii/mucat.php); multi-media sources and text materials (eg. Internet Archive http://archive.org/index.php) useful for researchers.

13. **Machine Translation:** Many leading search engines provide machine translation facility. (eg. Google Translate; https://translate.google.co.in/; Bing

Translator http://www.bing.com/translator/). Researchers can try translating their working papers, articles, research projects etc. using the same Even though the translated text may not be as accurate as the original text. That is why the researcher needs to work on trimming the translated work.

14. **Statistical Databases:** Researchers need to access the SDs like Econlit, IndiaStat, India Trade, National Accounts Statistics, CMIE's Prowess, Global Development Finance, World Development Indicators etc. Some of these sources are subscription based databases. Researchers can access them by subscribing them or taking membership of any research institutes. Moreover, there are many databases and portals that give authentic statistical reports. For instance: statistical reports of UNO (UNSD Statistical Databases (http://unstats.un.org/unsd/databases.htm), RBI (http://dbie.rbi.org.in/DBIE/dbie.rbi?site=home) are freely available.

15. **Bibliographic Databases** (BDs): BDs carry the bibliographic details of documents like author, title, publisher, year, edition etc. Some BDs are also available at abstract level. Researchers need to tap BDs to know the themes, contents and reviews of different documents. For instance: IndCat (http://indcat.inflibnet.ac.in), that gives the bibliographic information about the library holdings of Indian universities have been archived. Searchers can send requests to the concerned libraries for getting the photocopy/scanned pages of selected part/s of the document.

16. **Presentations:** Presentations (in the form of PPTs) are helpful for researchers to understand the latest trends and ideas of a presenter. A searcher can access the presentations using the *filetype:ppt* technique in Google, Yahoo (see Table-1) and also in http://www.slideshare.net.

17. **Webinars and Webcasts: "**Short for ***Web****-based sem****inar***, it is a presentation, lecture, workshop or seminar that is transmitted over the Web using *video conferencing software*. A key feature of a Webinar is its interactive elements -- the ability to give, receive and discuss information. Contrast with Webcast, in which the data transmission is one way and does not allow interaction between the presenter and the audience" (Webopedia, 2014). Researchers can get many such webinars and webcasts online through SEs.

18. **Blogs:** Blogs are also helpful for the researchers as the bloggers' postings and the readers' comments help the researchers understand the issues and trends on the posted/discussed topics. Researcher can use http://www.socialmedia.com to find out the postings and comments, at one place, made on different social networking sites.

19. **Data Analysis Softwares:** Researchers need to work on any of the data analysis softwares both open access and proprietary softwares. Free

softwares may not be exclusive with all necessary analytic tools/features but researchers can work on them as to understand the importance of the same. Some proprietary softwares (like SPSS) provide trail access/version for a specified period. Researchers can also download and work on any one of the free softwares (like MegaStat).

20. **Plagiarism Detection Softwares:** A machine assisted tool detecting matter of plagiarism within a project or document. There are free plagiarism detection portals available online viz. PlagirismDetect (http://plagiarism-detect.com/) and CopyTracker (http://copytracker.unige.ch/cts.php?action=index). The commercial softwares like Turnitin and PlagScan are also available.

21. **Reference Manager** (RM)**:** RM software helps manage the sources of citations referred for any research work. This helps add citations as per the conventions and prepare automatic bibliographies or references. The popular RMs are Zotero (https://www.zotero.org/) and Mendley (http://www.mendeley.com/).

22. **Librarian:** Above all, Librarian is the best human search engine. Librarian's skills and knowledge of online information sources help are incredible. The Librarian analyse, select, store, process and disseminate the authentic information sources to the researchers. Thus researchers need to interact with the Librarian and always share their experience and queries related to tapping the right information sources. Such meetings with a Librarian help researchers learn skills more effectively.

To sum up, there are incessant sources available online. Based on the understanding about the above tools and techniques, the researcher can search for similar tools online. Moreover, all the suggested tools/sources of information may not be available in an OA domain but it is sure that readers have tremendous avenues to get the full-text literature, if mastered the art of searching. The research product would then turn qualitative and adds some value to the existing stock of knowledge. The researchers need to spend quality time on Internet to explore the best sources and also need to access the libraries, their qualitative collection, information services and also interact with the library and information professionals. The researchers are advised to visit the libraries of the reputed research institutes and universities, at least those specialized libraries of their domain. They can avail the library membership of the same after fulfilling certain formalities. A researcher needs to remember that 'a good source of information leads to creating a good source of knowledge'.

Note: *All the web addresses, (URLs) mentioned in this article, were accessed individually by the author to prepare this paper.*

References:

- RePEc. (2014). *General Principles*. Retrieved July 28, 2014 from repec.org: http://www.repec.org
- UNESCO. (2014). *Open Educational Resources*. Retrieved July 29, 2014, from unesco.org: http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/
- *Webopedia*. (2014). *Webinar*. Retrieved July 29, 2014 from webopedia.com: http://www.webopedia.com/TERM/W/Webinar.html.