8 Winning hacks to use Google Scholar for your research paper

Tag: Tips | Author: Liz Ciavarella | Elsevier Research
Amanda Sparks
@AmandaSparks
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A literature search is one of the most important stages of the research process. And while looking for help on how to do a good job of it there is one piece of advice you will hear every time — "Use Google Scholar to find previously published papers in your field." But no one tells you that it is no longer enough to simply point your browser to Google Scholar to receive useful search results. Why is that?

There is simply too much information out there!

As a result, you will your own work being repetitive and innovative unless you supplement your search with other information sources. Also, if you don't do a thorough job of your search and begin with typing something in the search box, but there's more to it than just this. You need to make sure that the time you spend doing a literature search using Google Scholar yields results. The following are some best practices for using this valuable search tool.

RELATED TALK — How do I get back my citation credit in Google Scholar?
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1. Use citations to conduct backwards searches

Citations are a great way to find more relevant information about the article that you found in a search engine results page. There are clickable links you can use to broadcast backwards into other articles and content that have cited that source. This is a useful way to identify how others are using a research source. You can also determine whether or not the source has been used for the same research purposes as your own, or if there are discrepancies. Perhaps, they've got your find from a source of information. It is a good idea to verify that a source you are considering really meets your needs.

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In the next part of this series, I will introduce you to some tools that will help you with project management and data sharing.

Related reading:

- A young researcher's guide to digital tools for project management and data sharing
- Setting up the cloud, tools for collaborative writing
- The future of publishing: Nine tools to make the publication process smoother
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Updated on Sep 14, 2020
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Once you have decided on a research area/topic you'd like to study, and have formulated a research question, you need to review the literature on that topic. A literature review is a critical summary of all the published works on a particular topic. Conducting a comprehensive literature review is an essential step in research and publication. There are many benefits of a good literature review.

Scientist Careers recently published a series to discuss why it is important to keep up with literature in the field and they received several responses. One such response, which stuck a chord with me, was by Dr. Denis Bauer. Dr. Bauer said, "Staying up to date with the literature is perhaps the single most important skill that a research scientist needs to perform well in their job. Not only does it keep you informed about new discoveries, it also allows you to see what has or not work well in the past or right away."

Doing a thorough literature review can benefit you in another important way. A literature review is an important part of a scientific manuscript submitted for publication in a journal. A thorough literature review will show the journal editor and referees that you have done your research and are aware of existing research in your field.

Thus, there is no doubt that an effective literature review is every researcher's great research paper. However, while reviewing the literature in your research area, you may find that there aren't too many journal articles, i.e. not much research seems to have been done in your field. This is a great opportunity for you to publish a review paper, perhaps even by approximately 1.5 million open access articles. Therefore, it is highly unlikely that you're considering a research topic that no one else within your field has worked on or written about. (Note: However, this could be a common and frustrating experience for researchers who are focusing on highly specialized or specific aspects of a problem or their field, or in cases where little or no research has been carried out.)

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How do I write my literature review?
Professor Joseph Lipscomb, The Sam Houston State University

So if the problem isn't one of availability, then what else could be stopping you from writing a literature review? Perhaps you don't know where to start or you don't have the time/resources to simply insufficient. It is not mandatory for you to have a long reference list at the end of your manuscript. However, when conducting research, you review of the existing literature must present a view of the research field as it currently is. So what should you do if you fail to find relevant studies in your research area? These tips should help you get a head start on the pending literature review.

1. Broaden your search area

You have been thinking about research questions for days, maybe weeks. So it is possible that your thinking might be too constricted. You may have drawn very tight mental borders around your research question. As a result, you may not be able to see other research areas that might be relevant to your paper, even if they don't link directly.

For example, let's assume that your research question is about studying whether physical exercise can improve cognitive function in Alzheimer's patients. Your research question on the topic. You are at an advantage! You've realized that your research will fill the huge gap in this area of research. You will give you the edge to make a more significant contribution and assert the importance of your work. But you should worry about other will go in your literature review section.

If you were to broaden your search area, you might find relevant literature to back the hypothetical research question mentioned above. For instance, you could look at processes that make plants biodegradable or you could search for research on how to maximize the phone being used in transport. Both of these areas, while not directly related to your research question, will surely give you sound grounded for both cases.

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To begin with, you could look into more environmentally friendly plants such as bryophytes that are made from natural materials that don't rot. This will not only help with more relevant reading. But will also help with placing your specific research question in a broader conceptual framework and justify the contribution of your research.

2. Make sure you use the right keywords

One of the problems in your search for relevant sources could be irrelevant or unrelated keywords. Your keywords should be well defined and specifically targeted to the research papers you are looking for. Once you have your research question, identify its components. For example, if your research question is "Is physical exercise is important in improving childhood schizophrenia, you could use keywords such as "schizophrenia," "early onset schizophrenia," "schizophrenia in children," or "early symptoms of schizophrenia."

If you are conducting your search on Google and want to make the search more specific, enclose your keywords in key phrases in quotation marks. This will help you remove only those pages that contain your key terms in the sequence specified by you. Here is an example of such a search with enclosed keywords.

"early onset schizophrenia"
All | News | Videos | Images | More | Settings | Tools
Results for exact phrase
"PP" Early Onset Schizophrenia
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To make your search more focused, use keywords that you intend to use in your own paper. This will indicate the relevance of those terms in your field. It might also alerts your lights whether you should be more precise in defining your concepts as well as your keywords.

3. If you find relevant articles, explore them in depth

Having a limited number of references might need to your benefit - you get a short list of relevant articles to read. But it could also be a disaster if you find that you are spending anthemsing on the details of such article because you don't have an exhaustive list of references to go through. There is absolutely no need for you to be selective and constantly worry that you may have excluded an article that could have been of utmost importance to your study.

In addition, if there are few sources in your specific research area, there is a possible that many fundamental questions haven't been addressed and unanswered yet. If this is the case, then you could find limitations in the existing literature and use them to build or enhance your own research question.

4. Follow the citations of the articles you do find

Citations direct readers to prior relevant research in a specific field. By asking a relevant question, you are following the footsteps of others that have gone and in search of the same or similar answers. Citations are a great way to find relevant research and backward searching. If you have managed to find a couple of relevant articles, you could look at the references listed of those articles. This is one way of finding more relevant articles pertaining to your research area and is known as backward searching.

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Alternatively, you could also check the articles that have cited the papers that you initially found. This is known as forward searching and could help you find articles that weren't accessible through your keyword search. Finally, you could check other papers published by the authors of the papers you have found. All of this will help you to build on the references you have already gathered.

5. Ask for help

Finally, don't be afraid to don't hesitate to ask for help. Start by approaching the librarian at your university and ask for help. If you don't know, the librarian will be able to point you in the right direction. Alternatively, you could also approach a supervisor or a senior colleague. Having gone through a similar plight as the one you are currently facing, they will surely have a few tricks up their sleeve. It is perfectly fine to ask them to guide you in the right direction when you find yourself stuck.

You could also explore resources like forums and groups such as ResearchGate, Quora, or Mendeley which are virtual spaces specially designed for researchers. You can interact with other users and ask questions, share your research and receive feedback. Finally, you could also return the favor by helping out other other other researchers you in need. However, ensure that you review and share only legit copies of the journal articles. Remember that the person who shares the article should have the copyright.

If you are struck while reviewing literature, it is unlikely that a lot of previously published research papers is holding you back. When you find relevant literature to your immediate research area, you should always ask yourself "Have I done a pertinent?" In such a situation all you need to do is to identify of possible areas that would be linked to your research question and therefore those that might be relevant to your own paper. This will help you find relevance or build on the ones you've already found.

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Ultimately, this approach will contribute to a comprehensive self-documented review of existing literature in your area of research. You could also find the list of relevant professional publication support services to ensure that you find the most relevant papers. For example, Scribiqa's Literature Search Service.

You might find this course helpful: Literature review

Resources:

- Last find anything written on my topic... really?
- WHAT TO DO IF THERE ARE NO REFERENCES ON YOUR RESEARCH AREA
- Top 10 effective literature searching and keeping up with new publications
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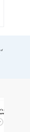

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It is important to find credible sources of information while researching for articles and other scholarly material to write an essay, a research paper or any other academic task.

Usually, the resources are collated and compiled from a variety of sources such as magazines, journals, newspapers, conference papers, and other publications. Some of these resources are considered popular sources whereas the others are considered as scholarly sources.

When conducting literature search, do a few searches about a source's authenticity and credibility. In this article, we focus on identifying a scholarly sources for obtaining reliable information to be presented in the research work such as class assignments, dissertation, or thesis writing.

Tips for searches in popular sources

Newspapers and magazines are considered as 'popular' sources. They cater to a broad audience and have articles that are written by professional writers for a general audience. Journalist who might not be an expert in the field in a more general way using simple language. Popular sources range these do not follow any specific format and rarely have references or bibliography.

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Books and journals, on the other hand, are considered 'scholarly' publications which are intended for specialist readership of researchers, academics, students, and professionals. They publish in-depth articles and reviews on specific topics written by specialists and researchers in a specialized and complex technical, subject specific jargon. Apart from having a standard format, these publications are always accompanied by bibliography and previously published references or sources.

Although popular sources are not without merit and may also contain well-considered articles, they are not as reliable as scholarly sources. Popular sources are characterized from degree of authority and depth of research, use of a great logo, and thereby their intrinsic academic value. If the project at hand allows it, you could depend on reliable popular sources.

Tips for referencing in scholarly sources:

Scholarly sources are also referred to as academic, peer-reviewed, or refereed sources. These are the sources researchers rely on. So let us discuss the three categories in which scholarly sources belong - journals, books, and online resources.

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1. Journals

An article published in a journal will have the following characteristics:

Authors: Names of the authors with their academic credentials, institutional affiliation, address, and e-mail addresses are provided alongside every publication. Make sure that the author(s) and/or corresponding author(s) are experts in the field, are affiliated to an unbiased reputable organization or credible academic institution/university, have had previous publications in peer-reviewed journals or books for which references can be found.

Publishers: Publishers are usually academic publishing houses, universities, research organisations, professional bodies, or other recognised authorities producing research.

Basic information, such as the names of the editorial board members and the Editor-in-Chief, is mentioned on the journal's website. You will also find information about the guidelines followed by the journal; for example, Committee On Publication Ethics (COPE) or International Committee of Medical Journal Editors (ICMJE). Examples of some well-known publishers include Springer, Elsevier, Taylor & Francis, Wiley-Blackwell Publishing, SAGE Publishing, Macmillan, American Association for the Advancement of Science, Nature Publishing, etc.

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Here are certain things you must look at when ascertaining the credibility of a journal:

- Make sure that the contact details and 'about' information is provided. Sometimes, the journal might be associated with institutions or societies. Look them up on the internet to get more information. Look out for the type of peer review the journal offers, and if all the details about their policies, licenses, and copyright terms are mentioned.
- Ensure that the information on the journal website has been recently updated and the links provided are up to date and working. Always check whether the journal website is part of a commercial organisation, a political party, or an organisation with a specific agenda, which might result in the information on the website being biased.
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The content should be non-biased and provide a very objective review or study on a particular topic stating both strengths and limitations of the study. Articles with numerous typographical mistakes, grammatical errors, or other inaccuracies are not reliable. Search for the citations of the article on library databases or on Google Scholar.

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2. Books

Books have been a source of information from time immemorial. The following points should be borne in mind while scouring books for scholarly content:

Authors: Always check the credibility of the author by verifying the biography details. Ensure that the author is an expert in the field of study, confirm the author's institutional affiliation, other publications of the author, and check if the publisher stands to benefit from the research or argument presented in the book.

Publisher: Books published by university presses, professional or trade associations, government offices, institutes, research centres, and reputable commercial publishers are usually trustworthy and have scholarly content. Searching for book reviews online, which can provide clues as to whether a source is scholarly and highlight the intended audience, can be useful. Visit the publisher's website and find out more information about the publisher to ensure that it is not a vanity press.

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Content: Checking for the following aspects can give a fair idea as to the authenticity and relevance of the book for scholarly information:

- Does the title of the book indicating its specificity of the topic?
- Multiple editions indicate the book is well-regarded enough to have been through revisions, and has been updated.
- Scrutinizing the preface and introduction of the book helps in assessing the author's perspective and the presence of any biases in the book.
- Scanning the table of contents, abbreviations, and index is helpful to know what facets of the subject/topic the book covers.
- Browsing the publication dates of references and/or a bibliography can help in assessing the reliability and accuracy of the information given in the book.

3. Websites: Online search is the most popular and convenient way to find information. However, caution should be exercised while procuring information from any website. Here are some tips:

Authenticity: URLs or website addresses can reveal the following information:

- Government sites use .gov and .mil domains. Educational sites use the .edu domain. And non-profit organizations use .org whereas business sites use .com. Generally, .gov and .edu sites are considered more trustworthy than .org and .com sites.
- Browse the web page for a name, email address, or the "About Us" or Contact Us" page to determine who created the site. Using search engines will aid you in obtaining biographical information about the publisher of the website.
- Usually, symbols like ~ and %, or words like 'staff' and 'students' are often used to signify a personal website and are found on the site URL. They might show up in official areas, but might not be officially sponsored by that group since students and faculty are often granted their own private space on university or school websites. Information on such websites often consists of personal opinions and might not be fully reliable.
- Searching for the history, the funding, and the focus of the organization supporting the website helps in ascertaining the authenticity of the website.

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Content: Surveying the content of the website can reveal a lot about the intent of the information presented:

- Check for the timeframe/timeline and geographical location that the topic addresses; check when was the website created and updated to ensure that the information presented is up-to-date.
- Browse the website for the types of links and citations that are present on the website. Read the contents of the website carefully to determine that the data and facts added value to the topic and are not prejudiced, manipulative, or distorted.

Conclusion

Describing and discussing correct and error-free information is a vital part of any academic writing. We hope that the pointers given in this article will aid you in finding valid sources of scholarly material. It is always a good idea to check with the librarian and library databases of the institution/university for authentic scholarly sources. While the verification process may take a bit of your time and effort, being sure of the authenticity of your sources will help you advance in your task with more confidence.

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Author
Dr. Radhika N.S.
An experienced researcher and scholarly publishing professional passionate about using her knowledge to help researchers communicate their science better.
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TAKE A BREAK

Editorial note: *You can download the ebook version of this article at the end of the page.*

The volume of publication output has exploded. You cannot rule out the possibility that your research topic has already been addressed in a recently published paper.

One of the most frequent reasons for rejection by journals is that the study is a duplication of work that's already been published. It is important to keep up with published works in your field and use a structured search strategy to make sure you don't overlook similar publications.

Benefits of a good literature search

a) It will prevent you from duplicating work that has already been done.
b) By synthesizing information from previous studies, you will be able to provide a stronger background, justification, and discussion of your own study.
c) Relevant studies can provide valuable insights and tips to make your own study better, such as the best methodology or data analysis methods to use.
d) You will be able to find gaps and weaknesses in the existing research and thereby come up with useful and meaningful research questions.
e) You will become familiar with terminologies in your field by using and finding suitable keywords.

Basic search strategies for discovery of literature:

Define your keywords

It is very important to use targeted keywords. Break up the topic you are researching into its main concepts, then define keywords for each concept. Next, expand the list by writing down synonyms and alternative phrasings for each keyword. Also, use terms that you plan to include in your own manuscript; this will indicate how relevant those terms are in the field or whether you should use more precise terms to define your concepts.

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Checklist for defining keywords

- What alternative vocabulary is used in discussion of my topic?
- Are there American and British variants of spelling or vocabulary?
- Can I identify a word-stem for truncation? E.g., child$ to find child, children, or childish.
- Are common abbreviations, acronyms or formulae used?
- What specific cases or examples am I interested in?
- What more general terms might include my topic?
- Are there categories I'd like to exclude?

Start your search

You might need to search several academic databases to make sure you've covered all bases. Since each database has unique sources for obtaining data and unique processes for deciding which journal articles to index, limiting your search to only one database may cause you to overlook relevant articles. For example, if you restrict your search to Elsevier's Science Direct, you are very likely to miss relevant publications, since this database mostly indexes journals published by Elsevier.

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Sources for searching

Bibliographic/general databases	Publisher databases and journal websites	Subject-specific databases
E.g., Scopus, ISI Web of Knowledge, Google Scholar, EMBASE, JSTOR, ProQuest	E.g., Elsevier's ScienceDirect, SpringerLink, Wiley Online Library, Oxford Journals	E.g., Medline, PsychINFO, MathSciNet, arxiv.org, Sociological Abstracts, EconLit, ERIC, INSPEC
Use to • Browse for popular and high quality articles • Start the discovery process and find an initial set of papers	Use to • Browse through journals that frequently publish on your topics of interest • Browse through journals specific to your specialization	Use to • Look for articles in a specific discipline • Do in-depth research on a particular topic • Look for articles on obscure or niche topics

Follow the citations

Once you have identified some relevant journal articles, an easy way to find more studies is by looking through the reference lists of these articles (backward searching). The reference studies are likely to be quite relevant for you as well. In addition, look at the papers that have cited the articles since they were published (forward searching). This will help you find the newer studies that have built upon the work.

Keep a written record of your searches

Note down the names of journals that you come across often during your searches. Over time, you will get a good idea of which journals are most prominent in your field and which journals you should consider publishing in. In addition, keep a list of the keywords and keyword combinations that return the best results. This will not only reduce the time taken for future searches but also yield a list of terminologies that are common in your field.

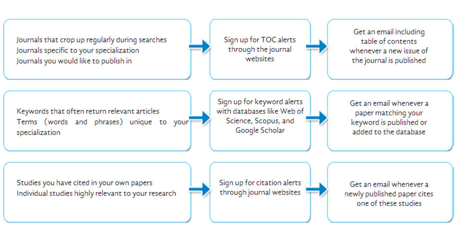
Use a references manager

With the huge number of studies you will probably have to sift through and track, manual compilation of references is no longer an option. Use a reference manager like Endnote (purchase required) or Zotero (free). Reference managers allow you to download and save papers in your computer's library directly from journal websites with just one button click. They also make it very easy to organize your library and compile reference lists. Although these programs may be difficult to use initially, skimming through their help manual or video tutorial along with a few days of learning through trial and error are all that's required to become comfortable with them. In case you find yourself too busy, you can also take help from professional publication services, for example, Editage's Literature Search Service.

Keeping up with literature

A large number of databases and publishers provide one or more of the following alerts features: Table-of-Contents (TOC) alerts, citation alerts, and keyword alerts. These alerts are very useful for keeping up with newly published papers and research topics. With many alert services, you receive alerts in the form of emails listing the title and authors of newly published papers, and sometimes even abstracts.

How to keep up with new publications through alerts



Books can be a useful starting point in your research. They can provide you a general overview of your topic (especially if you're just beginning your research career). There's also another valuable source of information. Grey literature consists of information that is not easily searchable through conventional search engines, databases, and library catalogues. Grey literature searches can yield valuable information indicating current hot topics for research.

Conference proceedings can provide the latest findings and discussions on the topic you're studying and give you clues on forthcoming papers that may be published. Unpublished clinical trials will inform you of trials already undertaken and their results. Theses, dissertations, and working papers can alert you to similar work being undertaken by other researchers. A note of caution: you do need to be extra careful when citing grey literature in your paper. Make sure that the scientific quality of the study you are citing can stand up to scrutiny.

Bibliography

1. Cochrane Handbook for Systematic Reviews of Interventions

The Cochrane Collaboration is a leading authority on literature reviews. Their handbook provides useful tips for conducting thorough literature searches.

2. Comprehensive list of subject-specific databases

This library website (from Louisiana State University) contains an alphabetized list of subject-specific databases.

3. Cornell University library website

This library websites lists the most common subject-specific databases and indicates which ones are free.

4. University of Rhode Island tutorial

This tutorial provides useful tips on using Boolean operators for searching effectively with keywords.

5. GreyNet International

Greynet has a comprehensive list of sources for grey literature, categorized by subject.

Do you need expert help? ***Editage's Literature Search Service*** *will help you find the most relevant and updated literature citations, and help determine the novelty of your study.*

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Author
Marisha Fonseca
An editor at heart and perfectionist by disposition, providing solutions for journals, publishers, and universities in areas like alt-text writing and publication consultancy.
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