

Ten steps to success



1. Analysis of the topic: Simply type “scholar” into the search box of Google and you will get the search engine as the first hit link (*scholar.google.de*). This search engine filters articles and books from the internet, which are available on scientific websites or on publishers’ servers. This also includes the Open Access offers of universities. Now, enter your topic very briefly (two keywords maximum), and you will get several hits, often as PDF. Please make sure that you only chose articles from specialist journals or books. University websites or websites by scientific organizations or professional associations are also valuable sources of information.

With the PDFs or DOCs, you proceed as follows: print and highlight keywords in the text as well as authors and titles in the literature references or in the table of contents with a text marker. In doing so, you will get a good overview of the specialist vocabulary in your topic. As soon as you find author names which are repeatedly mentioned regarding similar topics, you can be sure that they are experts in the respective field.

2.-3. Search keywords and building blocks (categories/subsets): You can now develop a search strategy with the keywords collected from the publication titles and texts, using the search model (PICO or MIP). In order to do so, you will enter the keyword in the respective category. Translate the keywords into English/German and think of synonyms and variations for each keyword.

4.-6. Specialist database, search options, thesaurus: For publications on medical ethics published in Germany, IDEM suggests our database ETHMED. You can find the database on these websites, and via the portal of the German Institute of Medical Documentation and Information (DEMEDI): www.dimdi.de (selection of database under E), and via MedPilot www.medpilot.de (separate selection of databases). It is also partly available in the integrative database BELIT of the German Reference Centre for Ethics in the Life Sciences (DRZE): www.drze.de (ETHMED is searched automatically, but can also be selected exclusively). In the American sector, the database MEDLINE is considered the most important database for medical issues. The database is available via the portal PubMed. Depending on the database you search, you have to consider specific **search options**. These include the following:

- **The Boolean Operators:** Are you familiar with OR, AND, NOT? If you are using the PICO model you connect terms of the subsets with the same concept with OR and terms of the subsets with different concepts with AND (**s.2.- 3.**). The Boolean Operator OR extends your search results, and AND limits them.
- **Thesaurus search:** Even though they have been filtered out as specialist vocabulary, you will notice soon that your search keywords do not always match the subject headings in a thesaurus. In order to get a good search result, however, you should definitely start with a thesaurus search. That is because in a thesaurus, the subject heading will only be indexed if the concept of the subject heading matches the content of the publication.
- **Wildcards:** For systematic searches (-reviews) a free-text search is obligatory. Considering the different spelling of terms the usage of truncation and wildcards is very helpful. Depending on the database the characters * or ? are used.

7.-9. Evaluating, extending, full texts: Depending on your search results (too many or not enough hits) with your search keywords and tags, you will have to adapt your search strategy. If your search is precise (precision), you are likely to not have enough hits (tag search). If your search is imprecise (sensitivity/recall), you are likely to have too many hits (free text search). If you want to map several contents (topics), you will have to modify your search with other keywords/tags.

In case you have not been using a literature management program so far, you should get one now: It offers you the possibility to match your literature with single points in the structure of your thesis. You can also integrate word documents and PDFs into the program as full texts, and hence include citations and texts from these documents in your thesis. The literature references for your work are prepared incidentally, and you do not have to worry about sorting them afterwards; you only have to take care of your citation style.

The literature management program ZOTERO is free, web-based and suitable for Mac, Windows and Linux. CITAVI is in German, but it is not web-based and only suitable for Windows (reasonably priced). Other than that, you can use EndNote – it is subject to a charge and offers about the same performance as ZOTERO.

10. Documentation: When you have decided that you have found relevant scientific literature, and that you can work on enough aspects of your theses, it is time to document your search. If you have conducted a strategic search, the documentation will be easy for you, since you have taken notes of WHAT you have found (keywords, subject headings), HOW you have found it (free-text search, thesaurus search, use of Boolean Operators), WHERE (which databases and portals) and WHEN you have found it (date), and HOW MANY hits you have found (up to 100 is common).

If you have any further questions, do not hesitate to contact us over the phone under +49(0)551-399577 or via email to Susanne.Raphael@medizin.uni-goettingen.de.