

IST 605
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Assignment 2D: Tools that are Pointers

Reference Source Evaluator: John Shaw Billings Group (Jen Ferguson)

Reference Source Category: Citation index

Title: Web of Science

Author/Editor: Thomson Scientific (Previously known as ISI)

Format examined: Online. No other formats are available. Web of Science was accessed via:
<http://portal.isiknowledge.com.libezproxy2.syr.edu/portal.cgi?DestApp=WOS&Func=Frame>

Publisher, place, and date of publication: Thomson Scientific, Philadelphia, PA

URL of publisher: <http://scientific.thomson.com/products/wos/>

Scope

Web of Science (WoS), which is part of Thomson's Web of Knowledge, consists of three core databases and two optional ones available at additional cost:

- Science Citation Index Expanded™
- Social Sciences Citation Index®
- Arts & Humanities Citation Index®
- Index Chemicus® (optional)
- Current Chemical Reactions® (optional)

These databases include scholarly articles from about 8,700 print and electronic journals in fields ranging from the arts and humanities, social sciences, to science and technology, making it a truly multidisciplinary resource. WoS is primarily a citation index that can also be used in other ways, such as by searching for author or subject.

While its emphasis is on citation searching of modern research articles, WoS has recently added coverage of earlier works. As of 2005, about 850,000 fully searchable, indexed pre-1950 journal articles have been added to Web of Science.

Web of Science is updated weekly. The main search page indicates the date of the most recent update. Science Citation Index alone averages 19,000 new articles added per week. Journals are added to and removed from the databases as often as every two weeks (Thomson Scientific, n.d.).

Treatment

Web of Science is aimed at fairly sophisticated information seekers. Its user base includes the faculty, staff and students of academic institutions, researchers and scientists, as well as librarians.

Biased coverage could arise through the journal selection process. Journals are selected for inclusion by the WoS editorial board. Thomson does solicit journal selection and deselection suggestions from its users via prominent email links. Thomson editors review about 2,000 new journal titles each year, choosing 10-12% for inclusion in the databases. Journals are evaluated for basic standards of publishing (particularly timeliness of publication), diversity of article authorship, and editorial content. Citation analysis and impact factors are also considered in the evaluation. Titles are evaluated by editorial staff with relevant educational backgrounds in the journal subject area (Thomson Scientific, n.d.).

Reviewers have generally agreed that WoS shows fair and balanced coverage in its journal collection. Minor deficiencies in coverage have been suggested in the area of third-world journals (Deis & Goodman, 2005) and non-English language European journals (Noruzi, 2005).

Authority

Dr. Eugene Garfield drew upon his background in chemistry, library science and linguistics, as well as his experiences working with medical information retrieval and indexing, in founding ISI, now known as Thomson Scientific. Garfield is a pioneer in the field of bibliometrics and citation indexing and is a creator of Science Citation Index, the first Internet citation index in existence and forerunner to WoS. Dr. Garfield is probably best known for the use of citation counts in generating the somewhat controversial yet widely used measure termed the 'impact factor' (Garfield, 2006).

Web of Science is considered the gold standard in the field of citation searching by many researchers. WoS has been in publication since 1965, originally existing as a printed database consisting of many "very large volumes of very small type". (Deis & Goodman, 2005).

As mentioned previously, Web of Science is governed by an editorial board. Unfortunately, little information is forthcoming about the identities of the editors.

Arrangement

Online searching capabilities allow for multiple ways of displaying and arranging information. Search results can be sorted by author, source publication, relevance, or year of publication.

Relation to Similar Works

Web of Science now has some competition in the citation searching field, including Elsevier's Scopus and Google Scholar.

Comparison to Scopus

Elsevier launched Scopus in 2004. Scopus is similar to WoS in that it is another multidisciplinary citation index database. Its scope is a bit different, as it focuses largely on the hard sciences. Shortly after its rollout, reviewers including Dess (2004) and Deis & Goodman (2005) raved about its speedy return of search results, its clean, easy-to-use interface, and were particularly giddy at the prospect of a more reasonably priced competitor to WoS. Scopus indexes 13,000 titles, considerably more than WoS does. Scopus also indexes quite a diverse collection of information resources; a given search might retrieve everything from journal articles to web sites to patents (Elsevier B.V., 2006; Jacso, 2004b). Scopus does have some disadvantages. While it indexes many more articles than WoS does, Scopus' coverage of citation searching is much more shallow, stretching back only to 1996 (Dess, 2004). Some of the initial enthusiasm for Scopus waned when librarians discovered that it would cost roughly 85 to 95 percent of what their institutions were paying for WoS, and, considering the differences in coverage, would likely not allow them to replace WoS (Deis & Goodman, 2005).

Short anecdote: I had heard the buzz about Scopus, and originally intended to use it as the subject of this review. I then discovered that none of the 3 institutions where I have library privileges actually has Scopus. However, they all do offer Web of Science, whereas I was only able to access Scopus via the Elsevier promo site. This was my first hint that maybe it would be better to review WoS instead.

Comparison to Google Scholar

Google Scholar offers quite a few of the advantages of Scopus and Web of Science, with the very significant additional advantage of being free to anyone with an Internet connection. Because Google Scholar locates web documents, it can find articles that have been posted on the Internet prior to publication in print sources, leading to the discovery of the most recent information possible. Google Scholar does not only uncover journal articles of interest; other documents such as reports, conference proceedings and dissertations can also be found via Google Scholar search (Noruzi, 2005).

This trait of finding many different types of materials can also be considered a disadvantage, for despite its name, Google Scholar searches also return non-scholarly material. In addition, many scholarly journals are not indexed at all. Unfortunately, Google is less than forthcoming about just which publications Scholar does not index. Some reviewers have claimed that Google Scholar crawlers do not access any Elsevier publications (Jacso, 2004a; Vine, 2006). If this is the case, it is a very significant omission since Elsevier is one of the leading journal publishers.

Special features of Web of Science include:

- Search results can be displayed with the related records feature. Related records are those that share citations with the record of interest. These records are displayed in order; those with the greatest number of shared citations are shown first.
- The chemistry databases allow the creation of structure drawings via a plug-in to search for chemical compounds and reactions.
- The WoS search page can be customized to use favorite defaults and saved to a user's personal profile.
- Citation Alerts can be enabled to alert users via email when new citations are found to favorite articles. Searches can also be saved, and email alerts sent when a new article meeting these parameters is found. These are invaluable tools for keeping up with the rapid pace of research.

Cost

The cost of Web of Science is difficult to determine and widely variable. Deis & Goodman (2005) estimated the annual price tag for Web of Science to range from \$100,000 for large institutions to the "low five figures" for smaller schools.

Critical Review

Web of Science is an extremely powerful interdisciplinary reference resource. Citation searching is a wonderful tool for elegant and precise searching, since many of the references found will naturally be closely related to the topic of interest. This method also does not require good knowledge of the subject terms for each database to maximize the retrieval of relevant records.

In addition to the power of citation searching, Web of Knowledge's CrossSearch function allows for searches across all Web of Knowledge databases including WoS, MEDLINE, and selected external collections. Online full-text articles are easily accessible once a search has been completed.

The downside is that Web of Science is very expensive. The cost will clearly be prohibitive for many smaller and less well-funded libraries. Perhaps Google Scholar will grow, improve, and eventually be able to fill this niche. At the very least, hopefully Scholar can serve as a stabilizing influence against the astronomical prices of Scopus and WoS.

Conclusion

For academic and special libraries where users require accurate, timely access to the latest scholarly research in the arts, humanities, social science and hard sciences, I recommend Web of Science as a very valuable tool.

References

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