

Abstracting and Indexing Databases

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This article explains the terms and practices of “indexing” journals and abstracting databases with a brief history of the practice. It points out the problems and issues in this field that researchers should be aware of when considering publication space for their work.

The term ‘Indexed Journal’ has become an important phrase in the last decade especially after it has been related to promotions and other academic purposes. Researchers are supposed to publish their research only in ‘indexed journals’. But what does ‘indexed journal’ mean? And how does indexing take place? What are the parameters and consequences?

Researchers should have adequate knowledge of various indexing and abstracting databases for various purposes. This article explains the terms and practices of ‘indexing’ journals and abstracting databases. After a brief history of the practice, the article discusses various Abstracting and Indexing databases (A&I) criteria of selection of journals in these databases, their usage and accessibility. It concludes with a word of caution and a list of popular A&I databases.

Academic journal

The 17th century witnessed the introduction of the Journal as a medium of communication for dissemination of scientific discoveries. The first research journal, published weekly, was by the *French Académie des Sciences* and the second one was “*Philosophical Transactions*” published by the Royal Society of London in 1665 (https://en.wikipedia.org/wiki/Academic_journal). According to Barnes, 330 periodicals were introduced in seven European countries between 1665 and 1730. These journals were popular not only because of the information about new discoveries but also due to the inclusion of table of contents and indexes of first individual volumes and list of articles published in other journals. Bibliographies of monographs and encyclopedias also paid attention to the contents published in learned journals. Since the beginning of the 19th century, researchers preferred to publish in journals rather than books, as they sought both to establish priority and to keep abreast with the latest developments in their fields. The volume of journal publication, though initially slow as compared to book production, increased rapidly with the growth of scholarship. This rapidly growing body of journal publication made it difficult for scholars to keep up with the current and retrospective developments which generated the need of having methodological and systematic apparatus to provide bibliographic control of the journal literature.

Three apparatus came into being; the abstract journal, the indexed journal and the review journal. As stated by Manzer, “abstract journal is the logical extension of the index journal,

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developed in the nineteenth century by the inclusion of abstract with the citation. The term "abstract" is defined at the International Conference on Science Abstracting (1949) "An abstract is a summary of a publication or article accompanied by an adequate bibliographical description to enable the publication or article to be traced." Abstract and index journals, both remained popular devices for having bibliographic control over the contents of periodical literature which later increased in numbers at a considerable pace. Indexing journal lists contents of the journals whereas the abstracting journal publishes contents with abstracts.

Abstracting journals serve as a surrogate for original articles. The first abstracting service was initiated in 1830 was Pharmaceutisches Centralblatt, Quarterly Journal of the Chemical Society came in 1847, Zoological Record started in 1864 and the Engineering Index in 1884. Chemical Abstracts (1907), Biological Abstracts (1926), Psychological Abstracts (1927), Sociological abstracts (1952), etc. followed, whereas Poole's Index to Periodical Literature is the pioneering one published in 1893 in New York. "Annual Literary Index", "Cumulative Index to a selected list of periodicals" are some of the examples. H. W. Wilson's "Guide to Periodical Literature" published in 1900 also became quite popular. The arrangement of these indexes was either alphabetical, classified, chronological, geographical or numerical to provide quick access to contents of the journals.

Bruce Manzer has discussed the historical account of several Abstracting and Indexing (A&I) services in his book *The Abstract Journal, 1790 -1920: Origin, Development, and Diffusion*. Many abstracting and indexing techniques also evolved during this period. The very first indexing technique is "back-of-book-index". Many journal indexing techniques like keyword indexing, citation indexing (discussed in later section), automatic indexing, were evolved. Library and Information Science professionals experimented on keyword and subject indexes such as 'alphabetical subject headings' by Charles Amni Cutter in 1876; 'systematic indexing' by Julius Kaiser in 1911; 'chain index' by Dr. Ranganathan used in *Indian National Bibliography* during 1950 to 1960; PREserved Context Index System (PRECIS) in the early 1970s for the British National Bibliography (BNB) by Derek Austin, and citation indexes by Eugene Garfield. Citations (references) are the formal, explicit conceptual linkage between two research articles. Citation index helps identifying original publication in which idea and concept was discussed. In today's context automatic indexing is more popular which is generated by computers. Abstract which is a summary of original publication also came into different formats. Lancaster mentioned indicative, informative and evaluative abstracts designed enabled user decide to read original publications. Print A&I services became very popular and integral part of libraries.

A&I services: print to online

The volume of scientific literature grew exponentially after the second world war, as a result of increased research and development activities that contributed to massive increase in scholarly journals. Advances in printing technology had an influence on the publishing industry. According to Derek J. Solla Price 10,000 journals were getting published in 1900. With the advent of computer technology especially after the 1960s, these services were converted into computer readable format specially to overcome the problem of retrieval of information, as it was very difficult to find the necessary information from the printed A&I services. Initially published print databases were made available on floppies, then on CDs and DVDs and finally online through the Internet.

The number of journals and databases increased over the period necessitated to have information sources like directory of journals and databases to have a bibliographic control over the published material. Throughout the 1980s, a large number of vendors as well as

database producing companies entered the marketplace. Several vendors and aggregators including Proquest, EBSCO, citation databases (Web of Science and Scopus), JSTOR (non-profit initiative), and others began indexing thousands of journals. The Directory of Open Access Journals indexes over 10,000 journals that are open to the public. As of today, nearly 3,000,000 journals are listed (but not indexed) in the Ulrich International Periodicals Directory, while 14,000 databases are listed in the Gale Database Directory. Directories are lists of all publications to achieve the bibliographic control whereas A&I databases selects publications for indexing based on defined criteria established by publishers. They tend to select best journals in their databases.

Journal selection criteria

As the number of journals increased, A&I database producers established the criteria for inclusion of journals into their databases. Some of the prominent criteria by world recognized databases are as below:

Basic Information

- Aim and scope of the journal
- Meaningful unique title
- Bibliographic information in English
- Reputation of publisher
- Verifiable ISSN of journal and address of publisher
- Publication history and frequency

Publication standard

- Timeliness of publication
- Quality of contents
- Peer review policy
- Academic credentials of Editorial board members
- Ethics and peer review policies
- Author guidelines
- Copyright and licensing information
- Access policies in case of Open Access
- Journal workflow and processes

A journal will not be eligible for inclusion in any A&I databases unless it passes the above criteria. These databases are dynamic and are updated on a regular basis. Journals will not be permanently indexed in these databases. Over time, if a journal does not fulfill the qualifying criteria can be classified as a 'non-indexed journal'. As a consequence, in order to stay in the database, 'indexed journals' should follow standard publishing practices. This also means that researchers should be cautious when choosing a journal to publish their research.

Benefits of A&I databases

Research published in A&I journals is important for researchers for various purposes among which the career promotion is the dominating one. Moreover, it is also necessary to secure funds, research awards and for recognition among peers. Publishing in journals indexed in citation databases viz. The Web of Science and Scopus is more prestigious among researchers. Publishers prefer to index their journals in these databases due to a variety of reasons among which they get more visibility and recognition to their journals. There are several benefits to the researchers such as,

- To identify authentic and appropriate literature as well as relevant authors in their field
- To receive recognition
- To get the primary information which may not have been included in books, encyclopedias
- To undertake scientometric studies based on citations with the help of citation databases to measure the research contributions by individual researchers, institutions, and countries.

Apart from above benefits to individual users, these databases are useful for ranking universities based on the research published in indexed journal. A&I databases are key tools for librarians to provide a variety of services to their users. Advanced database technology made it possible to search quickly on authors, subject, keywords and journals.

Challenges

Though A&I databases are beneficial to the researchers, there are certain challenges too.

- High subscription charges of these databases prove as a big obstacle to access them
- English is the preferred language by these databases. Journals in other languages those wish to be indexed must submit abstracts in English.
- Several credible journals have existed since the last several decades, especially in vernacular languages that may not get placed in these databases. Therefore, while deciding the rankings, the total research output is out of consideration.
- Research published in “indexed journals” is being used for academic promotions and for other purposes which is utterly meaningless for research output in arts and humanities in vernacular languages.
- It has also been noticed that users are not aware of A&I databases and even though if they are aware, they may not have enough knowledge to search these databases effectively. Training programs or orientation programs are necessary to make users aware of the existence of these databases as well as to search these databases effectively.

A word of caution

The Publish or Perish policy for career development resulted in publishing of predatory journals as well as predatory A&I databases. Dubious A&I databases do not use any criteria for inclusion of journals. Therefore, researchers get attracted to publish in such journals. Many such databases include journals on the basis of “Pay and Index”. Before falling prey to such “indexed journals,” researchers can use the credibility of these database producers on the basis Subject coverage and updation policy, journal inclusion and discontinuation criteria, and so on. Some of the dubious and questionable criteria of such database are as follows

- Journal indexing on payment basis
- Indexes journals which are already indexed in credible indexing database
- False citation count and Fabricated impact factor
- Several grammatical mistakes
- Inclusion of predatory journals
- Unknown journal position criteria and dubious values to journal

Some of the dubious A&I databases are listed below. All of them share most of the characteristics identified above.

Dubious A&I databases

1. Open Academic Journals Index – OAJI (<http://oaji.net/contact-us.html>)
2. Scientific indexing services (<https://www.sindexs.org/>)
3. ROOT Indexing (<https://rootindexing.com/journal-master-list/>)
4. Academic Resource Index (<http://journalseeker.researchbib.com/>)
5. I2OR (<http://www.i2or.com/8.html>)
6. Eurasian Scientific Journal (<http://esjindex.org/>)
7. International Scientific Indexing (<https://isindexing.com/isi/>)
8. Indian Citation Index (<http://www.indiancitationindex.com/ici.aspx>)

List of popular A&I databases

1. [Web of Science](#)
2. [Scopus](#)
3. [Biological Abstracts](#)
4. [Chemical Abstracts](#)
5. [Current Contents](#) (in various subject areas)
6. [PubMed](#)
7. [Educational Resources Information Center](#)
8. [MathSciNet](#)
9. [Library and Information Science Abstracts](#)
10. [Agricola](#)

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