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## A study on the concepts of indexing and its benefits to research

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### ABSTRACT

*Indexing is a database of higher scientific journals having a good track record of maintaining the ethics and quality in terms of publication. It is the process of creating indexes for record collections. Having indexes allows researchers to more quickly find records for specific individuals; without them, researchers might have to look through hundreds or thousands of records to locate an individual record. It also represents a number referring to a list of terms, definitions, topics etc. arranged in alphabetical order in order to efficiently guide the readers to the desired information within the content. Indexing facilitates in the organization of literature in such a manner that makes the document of interest easily identifiable by the readers. Indexing journals are considered to have higher quality when compared to non-indexed journals. It is collection of information stored on a computer or on a set of cards in an alphabetical order and hence it helps the reader find information quickly and easily. A useful Index is considered as a list of words and phrases used in publication and is also an organized map of contents, including cross references, grouping of like concepts and other intellectual analysis. The purpose of indexing is to have faster learning, acknowledgement, prominence of persons, subjects etc. A professional index must act as a liaison between the text and its ultimate user. The study is focussed on the concepts of indexing and its benefits to research.*

**Keywords**— *Indexing, Indexing parameters, Open Access journals, Review method, Indexing agencies.*

### 1. INTRODUCTION

The word Index is derived from Latin, in which Index means “one who points out”, an indication. An index is a roadmap to the book, listing names, places, things in alphabetical order and giving the page numbers associated with each topic. A well-designed index can guide the readers quickly get the information they are looking for. A complete index is not simply a list of words and phrases used in publication, but an organised map of its contents, including cross references, grouping of like concepts and other useful intellectual analysis. Indexing assigns descriptors

### 2. HISTORY OF INDEXING

The concept of Indexing gained prominence with the invention of printing during the fifteenth century. It started with papyrus scroll which was used by ancient Greeks and Romans. This was used for sorting of information. Later, they started working on writing large works that compiled data from various sources.

Indexing was also used to list phrases and concordances to Bible. This began from the 7<sup>th</sup> century. Indexing was also used for subject indexes to work on ethics, natural philosophy and logic. Headwords and marginal references from the manuscripts were used as a guide to text.

In 1460, printed books on indexing appeared. The field of medicine was also helped with indexing. It was used to index medical texts and herbals. In 1544, Biblical concordance was first published. The composer was burned as it effected the religious belief of certain sections of people. Alexander Cruden wrote concordance again and published in the year 1737. This is still under print. The next prominent movement in Indexing was seen with the first dictionary in English language. In 1755 Samuel Johnson produced this single handily.

In the 19<sup>th</sup> century with the formation of Indexing society in 1877, coding in indexing came into picture. They aimed at creating ‘a general index of universe literature’. In 1878, Henry Benjamin Wheatley wrote “What is an Indexer?” Later the society of indexers as formed in Great Britain in the year 1947.

William Frederick Poole started his index to periodical literature. Almost during the same time, Belgium Paul Otlet started ‘Bibliographic Repertory’. This was said to be the universal index of all knowledge. In the year 1914, this has a record of over

eleven million entries backed by text files and illustrations. Later, the British standard on indexing was published with subsequent revisions. Modernisation is often marked by the availability and access to computers. This had a huge and positive impact in the process of indexing. This had helped to record and organise large amount of database.

### 3. IMPORTANCE OF INDEXING

- Indexing will help the journal achieve its main purpose of being accessible to a wide audience.
- Being accessible in turn will improve the journals reputation as a reliable source of high- quality information in your field.
- Database research is the first activity researchers undertake as part of their study, and they naturally look to established, well-known databases. Thus, being indexed in a known database will help increase the journal's readership.

Indexing parameters are classified into two:

- (a) Open parameters: This can be done manually. It is generalised by humans and are easily understandable.
- (b) Closed parameters: This cannot be done manually. Some computer programming will be required for these parameters.

A detailed classification of indexing parameters is stated below:

- (a) Impact factor: It is a journal Metrix associated with academic journals. It is a copywrite registered keyword. Impact factor is declared annually using Journal Citation Report. JCR is a registered key mark. The lock in period is 4 years. The impact factor is for articles
- (b) Cite score: Cite score of an academic journal is a measure reflecting the yearly average number of citations to recent articles published in that journal.
- (c) H-index: This measure both productivity and citation impact of the publications of a scholar. Maximum h such that h articles are cited at least h times each. H- index is primarily for authors, and it also can be for institutions, countries, group of authors, geographical locations and departments. Minimum h-index is zero. Maximum h-index is the number of articles published by a person. H- index is a freely usable measure.
- (d) G-index: This is an index for quantifying productivity in science, based on publication record.
- (e) i10- index: This shows how many articles of an author got 10 citations each.
- (f) SNIP: Source Normalised Impact per Paper (SNIP) measures contextual citation impact by weighting citations based on the total number of citations in a subject field.
- (g) SJR: SC Imago Journal Rank is a measure of the prestige of scholarly journals. SJR scores are computed using network analysis of citations received by journals.
- (h) Cited Half-life: The cited half-life is the average age of articles cited by the journal in the JCR (Journal Citation Report) year.
- (i) IC Value: It is a formula which quantifies the qualitative aspects of journal and also considers citations.
- (j) h5-index: This is time bound. Maximum h such that h articles published in the last five complete years are cited at least h times each.
- (k) h5-median: This shows the balanced nature of publications.
- (l) m-index: It counts the publication life of a person
- (m) Eigen factor score: It measures the number of times articles from the journal published in the past five years have been cited in the Journal Citation Reports year. Like the impact factor Eigen factor score is essentially a ratio of number of citations to total number of articles.

### 4. REVIEW METHODS

In research, peer review plays an important role to check the authenticity of publication. This validates academic work, which helps to improve the quality of published research. The two important ways of reviewing are:

- (a) Open review
- (b) Closed review

Open review will have a transparency in the process of reviewing. In this case both author and reviewer are known to each other. This brings in quality discussion between the both.

Closed review is categorized under three categories. They are single blind, double blind and triple blind.

- **Single blind review:** In this method the reviewer is not known to the author. This helps to get impartial review to a publication. There are possibilities that the reviewer may be too critical while reviewing a publication. This process is often delayed.
- **Double blind review:** Here neither the author nor the reviewer is known to each other. This results in a healthy reviewing process as the authors anonymity limits reviewer bias.
- **Triple blind review:** Here the reviewers are anonymous and the authors identity is unknown to both reviewers and the editors. Articles are anonymised at the submission stage and are handled in such a way to minimise any potential bias towards the authors. This helps new and good researchers gain appropriate recognition and platform to show their ability.

#### 4.1 Open journals

Open Access journals or Open Journals refers to those which are open and free to access for all. They are free and unrestricted. There are two ways of making a publication openly accessible. The first one involves publishing articles or books through open access route on a publisher's platform. The second one is having a manuscript under Open Access repository. This often takes time and comes under open access after certain time period. There are two routes to Open access:

- **Gold open access:** This makes the final version of an article freely and permanently accessible to everyone, immediately after publication. Copyright for the article is retained by the authors and most of the permission barriers are removed.
- **Green Open access:** This is also referred to as self-archiving. It is a practice of making a version of an author's manuscript into a repository, making it freely accessible for everyone. This is dependent on a funder or publisher. The copyright of these articles is usually with the publisher, or the society affiliated with, the title and there are restrictions as to how the work can be reused.

#### **4.2 Basic Indexing standards**

All academic index requires journals to follow certain core publishing standards. To meet basic indexing requirements, journals should have:

1. An International Standard Serial Number (ISSN)
2. Digital Object Identifiers (DOI)
3. An established publishing schedules
4. A copyright policy
5. Basic article-level meta data

#### **4.3 Common Index types**

**(a) Primary search engine:** Scholars start their research by looking into the search engines to know whether their articles if published in a journal will appear in general searches in order to make sure that it is easily accessible to the public. Search engine indexing is free.

**(b) Scholar search engines:** Google scholar is a web search engine run by google that indexes scholarly literature like peer reviewed journals, academic books, conference papers etc.

**(c) General scholarly indexes:** General indexes cover a broad variety of topics and may index popular magazines, newspapers and some scholarly journals.

**(d) Discipline- specific:** Discipline specific is a set of understanding that is more than the broad knowledge of the field. This would be more beneficial for readers who prefer to reach only discipline oriented journals than looking into the general journals.

To conclude indexing helps to locate the position of a specific document in files at a short period of time. This makes the readers job easy and within a short span he will be able to do go through various articles. The purpose of indexing is to have faster learning, acknowledgement, prominence of persons, subjects etc.

#### **4.4 Indexing agencies**

Indexing is a database of scientific journals having a good track record of maintaining the ethics and quality in terms of publication. Indexing journals considered to be higher quality in comparison to any non-index journals. Indexing of a journal provides better visibility of the journal with a wider user. Being visible and accessible to larger people will cause better quality papers and results. Here are some of the most reputed journal indexing agencies

- Scopus
- Google scholar
- Web of science
- PubMed
- EBSCO
- IJIFACTOR
- EMBASE
- DOAJ
- ISI Indexing
- SCIE
- SCIMAGOJR
- OAJI
- Index Copernicus
- Open J Gate
- Ulrich's International Periodical Directory
- BASE

#### **4.5 Advantages of Indexing**

Indexed publications are believed to be of greater objective essence than those that are non-indexed journals. The various advantages of indexing are:

**(a) Spread "The Word" About Your Ground-breaking Research Outcomes:** Reputed journals promote the spontaneous expansion of ground-breaking research work and outcomes by permitting researchers to declare their work on a global scale, guaranteeing certain accreditation and encouraging career elevation.

**(b) Helps to gain a reputation in Global scientific community:** Reputed journals draws collective outstanding outcomes, superior investigation, and advanced research work, into a single platform.

**(c) Paves the way for collaborative opportunities:** Reputed journals fosters collaboration by exhibiting the expertise of important partners and obvious experts purely on the merit and quality of their research work and experimental studies. This helps top experts who need people to collaborate with, easily connect with those that show immense potential in their respective field/fields of research and study.

**(d) Helps in acquiring necessary funding:** The publication of an article in a world-renowned indexed journal enormously enriches the chances for the respective author/researcher of gaining critical financing and funding.

**(e) Access to most recent literature:** Researchers gain access to the most recent literature, even if it has not yet been indexed by other sources.

**(f) Database research is the first activity researchers undertake as a part of their study, and they generally look for established well known databases. Hence being indexed in a known database will increase its readership.**

**(g) Indexing makes it possible to retrieve data.**

**Here are a few steps to include your articles to the index**

1. Checking your HTML or PDF file formats to make sure the text is searchable.
2. Configuring your website to export bibliographic data in HTML meta tags.
3. Publishing all articles on separate web pages (i.e. each article should have its own URL).
4. Making sure your journal websites are available to both users and crawlers at all times.
5. Making sure you have a browse interface that can be crawled by Google's robots.
6. Placing each article and each abstract in a separate HTML or PDF file.

**5. PURPOSE OF THE STUDY**

This study focussed on introducing the various concepts of indexing and its benefits to the research for research scholars. In the current competing world, it is highly important for research scholars to publish various articles of different disciplines which will bring in a positive change in the society. It is highly important for the scholars to understand the need for publishing their articles in well known indexed journals. This paper will help them get an insight on the various aspects of indexing and its benefits to research.

**6. RESEARCH METHODOLOGY**

This study has been done to understand the various concepts of indexing and how it is beneficial to research. Secondary data has been collected to get an in-depth knowledge on the role of indexing and how it is important for research.

**7. CONCLUSION**

Indexing has made the life of a researcher convenient and easy. This article lists down the concept, history, indexing agencies, indexing parameters, indexing standards, types, benefits of indexing and various review methods. Indexing helps a researcher understand a concept in a structured manner. However, the task of indexing may be tedious and long. With the intervention of technology, the process has become easier and more convenient. This article can guide future researchers to understand the concept and design process for indexing.

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