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The relevance of indexing in scientific research

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ABSTRACT

Any scholar would want to gauge the impact of his work on the scientific and intellectual community. This can be done by ascertaining how many times his work has been cited and utilised by other researchers. This also reflects the quality, authenticity of his work and if it is being used as a basis for any future study. Overall, this evidences the importance of indexing and agencies of indexing. They help organise and track the usage of papers and other forms of publication. Therefore, for every researcher, indexing is imperative either when publishing or reviewing articles. The study intends on reinstating the concept of Indexing and Indexed Journal and their importance in scientific research. The study comprises of six folds- the first fold highlighting the concept and its significance, the second, tracing back the history of indexing. The third fold deals with the prominent indexing agencies. The fourth- and fifth-fold deal with the parameters of indexing and review methods, respectively. Lastly, the sixth fold is the conclusion of the paper.

Keywords— Indexing, Indexing Agencies, Indexing Parameters. Review Methods

1. INTRODUCTION

In order to stand apart from among numerous different journals and publications that are swarming the finite intellectual space, journals must build their perceivability, accessibility, and readership. One of the ways by which a journal can accomplish this is by getting their indexed by at least one driving databases.

Citation Indexing is defined as, “an ordered list of cited articles, each accompanied by a list of citing articles” (Garfield, 1955). Indexing is known to be the brainchild of Garfield and has proved to be a parameter of quality and authenticity of a journal. Indexed journals are considered to be of higher scientific quality as compared to non-indexed journals.

In layman’s terms, Citation Index creates links between articles that were written in the past and articles that make reference, as citations, to these older publications. In other words, it is a technique that allows one to trace the use of an idea incorporated in an earlier document, forward to others who have used or cited the same in their work. The evidence that we take as indicating this “relationship” between earlier research and subsequent research are the references or footnotes or endnotes (citations) in the more recent work (Bloor & Wood, 2006). It is this evidence which shows clearly how, where and when one’s work is used. This helps in showing the credibility of a researcher’s study.

Once a journal is indexed by a database, it is immediately made available to the users of that database. Some databases index titles, some index full articles while some others index only the abstract and/or references. There are several abstracting and indexing services available today that have parameters to adhere to in order to index a database and be affiliated to it. The value and quality of the extensive use of information is a clear reflection and indication of its impact on the world at large.

2. HISTORY

Pre-1950s, Scientific Literature was exposed to growing dissatisfaction in the research community because of the extent of information and sources available, but lacked structure, accessibility and reliability. The aftermath of the Second World War, changed this scenario. Owing to the large investments made by the government of United State of America into research, that stimulated and motivated researchers to contribute more to the intellectual field. However, there lacked a method of indexing and retrieval of information that is both efficient and cost-effective- since manual labour of indexing could not cater to the large influx of research and other intellectual contributions. (Garfield, 1955)

Another factor of concern was the excessive time lag in adding materials to the indexes. The situation would be such that a researcher would find a study relevant to his research after many months passed. The difficulty of terminologies overlapping

discipline made it difficult in the area of publication. This was beyond the purview of man and required that of automation. With this, there was a growing concern that the existent methods and facilities will be incapable of transferring the extent of scientific information collected and hence wanted to adopt better methods for the distribution and management of scientific information. (Web of Science, 2020)

In 1960, the Eugene Garfields Institute for Scientific Information (ISI) introduced the first citation index for papers published in academic journals, first the science citation index (SCI) and later social science's citation index and the arts and humanities citation index. The first automated citation indexing was done by "CiteSeer" in 1997. Other sources for such data include Google Scholar and Elsevier's Scopus (Dhammi & Haq, 2016). The concept of citation index in scientific studies is a culmination of the nature of the intellectual perceptions by the functional relationship between the index and the user of it. (Garfield, 2012)

3. INDEXING AGENCIES

The aim of any research is make one's study accessible and usable by other researchers to increase their knowledge and understanding. The information so begotten must be authentic, reliable and capable of future studies. It should be accessible in order to read about it, analyse it, and constructively use the data in their own research to forward the cause of science. This idea of collating, classifying, and cataloguing journals is the function and main work of indexing agencies and databases.

Journal Indexing Agencies rate journals on certain parameters. All academic indexes require journals to follow certain imperative publishing standards like- International Standard Serial Number (ISSN), Digital Object Identifiers (DOIs), established publishing schedule, copyright policy, basic article-level metadata (Padula, 2019).

3.1 EBSCO

EBSCO is named after its found, Elton B. Stephens, in United State of America in 1944. Since its inception, it has served as one of the largest publishers and collectors of resources and information, like full-text journals, magazines, newspapers and other information sources. All indexing at EBSCO is based on rules of the Library of Congress and the Anglo-American Cataloging rules. EBSCO carefully picks out those journals to be included in their databases. The aspects looked into are: extent of right in regard to the context, any existing agreement with a publisher restricting from including specific content and if the subject makes sense under the banner of the database. (Wlodarczyk, 2017)

EBSCO covers a large range of subject publications, including agriculture, law, psychology, vocational training and much more. For EBSCO's proprietary databases, EBSCO provides cover-to-cover indexing and abstracts, irrespective of article length or content, for all magazine or journal articles, as well as cover-to-cover full text for all magazine or journal articles for which we have rights. Certain exceptions are Poetry, only full text of directories, dictionaries and encyclopaedias.

EBSCO has scientific committees seeking to index the journals with the highest impact factors among researchers. It is evident that the agency has not failed in bringing within their ambit all areas of scientific knowledge with the aim of furthering and updating itself as and when required. These committees pay close attention to the following points (Aithal, 2017):

- (a) Quality of the scientific content of the journals
- (b) Absence of a journal on suspicious website
- (c) Effective scientific impact by referring to statistical reports
- (d) Fulfilment of the principles of publication ethics and authors' consent

Currently EBSCO website evidences the publications indexed by EBSCO- 17864 = Total number of journals & magazines indexed and abstracted (15984- peer-reviewed) and 8757 = Total number of journals & magazines in full text (7598- peer-reviewed).

3.2 Google Scholar

Google Scholar (GS) since its introduction in 2004 caters to the scientific community by allowing access to "peer-reviewed papers, thesis, books, abstracts and articles from academic publisher's sites, professional societies, pre-print repositories, universities and other scholarly organizations" (Vine, 2006). GS strives to maintain authenticity by including only articles from trusted sources and articles that are 'invited' (cited) by articles already indexed are included in the database. (Beel & Gipp, 2010).

Google Scholar is a freely available search engine that searches across a wide range of academic sources. Recent estimates of Google Scholar's content have found that it indexes over 160 million items, including journal articles, book chapters, dissertations, and conference papers (Orduña-Malea, 2014). However, Google Scholar's website does not provide any information regarding the number of conference papers included in the academic search engine Google Scholar is often cited as a source for gray literature, especially in the search methodology for systematic reviews and in library research guides on gray literature. Gray literature is where documents are cited for non-commercial purposes and outside the purview of educational arena, like Government Reports, Policy documents etc (Bonoto, 2016).

A primary benefit of GS is that its search functionality focuses on individual articles and not entire journal (Noruzi, 2005). However, Google's unwillingness to name the publishers or services which have cooperated in the creation of the GS database is an unacknowledged but significant barrier to serious researchers, who tend to know their sources well and who may have sophisticated (or sceptical) views of the uses of web search engines.

3.3 Web of Science (WoS)

Web of Science is the world's most trusted publisher-independent global citation database. Guided by the legacy of Dr Eugene Garfield, inventor of the world's first citation index, Web of Science is the most powerful research engine, delivering your library with best-in-class publication and citation data for confident discovery, access and assessment (Mongeon, 2015).

The Web of Science provides a common search language, navigation environment, and data structure allowing researchers to search broadly across disparate resources and use the citation connections inherent to the index to navigate to relevant research results and measure impact. It consists of over 76 million records, more than 111,000 books and over 8 million conference papers. Every article and all cited references from every journal have been indexed, creating the most comprehensive and complete citation network to power both confident discovery and trusted assessment. The updating frequency is almost on a weekly basis if not daily. The journals covered are from different backgrounds like Life sciences, biomedical sciences, engineering, social sciences, arts & humanities (Yeung, 2019).

3.4 Scopus

Scopus is a database of high repute and is the largest indexer of global research content. Scopus incorporates titles from over 5,000 publishers around the world. These journals, books and conference papers become accessible and serve as a source of information to a huge number of Scopus users. To ensure that Scopus serves the broad information needs of researchers, a Content Selection & Advisory Board (CSAB) continuously reviews suggestions and publishing programs in order to expand our content listings. The Scopus selection criteria are (Francis, 2019):

- (a) Peer review
- (b) English abstracts
- (c) Regular publication
- (d) References in Roman script
- (e) Publication ethics statement

4. INDEXING PARAMETERS

In general, Journal Indexing Parameters are as follows:

- (a) Journal must have ISSN (Online or Print or Both)
- (b) An ISSN is an international standard serial number, a unique international identifier for serial publications. ISSN have been assigned since the 1970s and are universally accepted within the print publishing world as a means of identifying the serials (Achalare, 2014)
- (c) At least one issue of the Journal should have been published
- (d) Regularity of Journal in publishing issues is mandatory
- (e) This is essential in order to show its presence and continuity
- (f) Published papers should be available either online or in .pdf format
- (g) The main aim of papers is to be of use to those interested in it. There should be provision for studies to be readable online or downloadable.
- (h) Editorial board page with names and titles
- (i) The Editorial Board is important because it reflects the reputation of the journal. Institutions that each member is affiliated to also should be mentioned.
- (j) Clearly stated peer review policy
- (k) Established publishing schedule
- (l) Established copyright policy

5. REVIEW METHODS

- (a) Single Blind- This is also known as, “one-eyed review” (Rosenblatt & Kirk 1980). The important point here is that the term “single-blind reviewing” applies only to hiding the identity of the reviewer from the author.
- (b) Double Blind- A system in which both reviewers’ and authors’ identities are hidden, is used by many medical journals to protect authors from potential reviewer bias concerning publication recommendations (Snodgrass, 2006).
- (c) Triple Blind- where editors also are kept blind from the authors and viceversa. This practice makes the entire review process transparent, and may possibly remove the unethical means that are still hidden within the editorial process. This is important for the authors, and particularly for those coming from less privileged backgrounds. The editorial responsibilities ought to be thoroughly checked if one aims to make the publications process clear, transparent and of high standard (Shah, 2018).

6. CONCLUSION

The concept of Indexing was one that changed the face of publications. It brought forward more of a systematic and organised set up of journals and other forms of publication. What began in the 1950s has become the most contemporary need for every researcher. The advantages received by publishing in indexed journals boosts the papers involved and also the morale of the researcher allowing him to know where and how his work has been accepted in the scholarly community. The visibility so created by indexing journals has brought publications to the forefront. As for the Indexing Agencies, they have received a name for itself, owing to their stringent and varied parameters allowing them to choose what journal is associated to their trademark. In conclusion, indexed journals are the most sought after in comparison to those that are non-indexed. It reflects authenticity, quality and visibility in the intellectual domain.

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