

Chapter - 1

1. Introduction

The scientific world has been witnessing explosive growth in the number and types of information resources since the publication of the first scientific journal, The Philosophical Transactions of the Royal Society in the year 1665. The exponential growth in the scientific journal publication was reported way back in 1975 by De Solla Price (Price & Price 1986), and a later study (Varian 2003) estimated that the amount of new information stored on paper, film, magnetic tape and optical media are getting doubled in three years. The growth in scientific literature coupled with the developments in computer storage and communication technologies resulted in the emergence of bibliographic and full-text databases. These databases help the scientists in searching and locating the relevant information very easily from a vast pool of scientific knowledge generated from across the world.

1.1 Statement of the Problem

The growth in the published literature in different branches of knowledge resulted in the development of thousands of literature databases worldwide. The majority of them are international, covering the scholarly works reported in the scientific journals published across the world. Some of these databases, such as Web of Science and Scopus are general, covering all the knowledge fields. Others are focused on a single domain. E.g. Medline (*medicine*), Agricola (*agricultural sciences*), and Compendex (*engineering sciences*). Singh (2001) observed that India produces world-class research in healthcare and biomedicine while the Indian studies are hardly available for reference on international bibliographic databases.

Only a few databases are operating at the national level in India such as IndMed, covering the scientific literature reported in 100 medical journals published from the country, Traditional Knowledge Digital Library (TKDL) a database on traditional knowledge in the field of Ayurveda, Unani and Siddha in five international languages, English, French, German, Spanish and Japanese, and Open Index Initiative (OII) a database consists of Indian Social Science literature from selected Indian social science Journals and working papers/discussion papers/occasional papers, and thesis/dissertations are emanating from Indian social science institutes.

The field of communication disorders deals with the disorders related to speech and hearing, and a considerable amount of research is taking place in countries across the world

on various aspects of communication disorders. India has also contributed dynamically to the global scholarly literature on communication disorders by conducting noteworthy studies on numerous aspects of the disorders.

However, there is only one database exclusively based on the scientific literature on communication disorders, namely Comdisdome published by the ProquestIncorp, USA. The Proquest also publishes a related database known as Linguistics and Language Behaviuor Abstracts (LLBA), which covers the literature on language disorders. Both the Comdisdome and LLBA are international in coverage but with a meagre representation of Indian studies. Hence, there is a need for a system that provides access to the research publications on communication disorders published from India and give them greater visibility to a worldwide audience. It will address the need for a common platform where the researchers can access all the studies published in the country in communication disorders. This project addressed the design and development of a web-based database on Indian scholarly literature on communication disorders using open source tools.

1.2 Aims and Objectives

The project aimed to design and develop an open-source software-based platform for the Indian literature on communication disorders. The specific objectives were the following:

1. To serve as an online gateway to the Indian scholarly literature on communication disorders
2. To provide an organized collection of resources on communication disorders published in India
3. To create appropriate metadata and facilitate effective retrieval of resources
4. To enable the collection, preservation, and sharing of published research output on communication disorders in India
5. To facilitate quantitative analysis of Indian literature on communication disorders

1.3 Scope

The study covered the Indian literature on speech, language, and hearing disorders published as journal articles, books, book chapters, and conference proceedings from 1962 to 2019. It excluded the Indian studies published outside the country. Most of the records were with only bibliographic details. Wherever permissible and obtainable, the abstracts and full-text are included.

1.4 Review of Literature

The first literature database developed in the bio-medical field was MEDLARS (Medical Literature Analysis and Retrieval System) by the National Library of Medicine, USA, in 1964. In 1971, it was converted to an online database, called MEDLINE (MEDLARS Online). (Adams, 1972). Two other major bio-medical literature databases developed during the initial days of technology applications in information science were BIOSIS in 1969 (Van, 1977) and EMBASE in 1974 (“Embase” 2014). The emergence of bibliographic standards and advanced technologies resulted in more comprehensive, sophisticated, and user-friendly literature databases. Subramanyama et al. (2017) reported the developments in storage technologies as one of the factors contributing to the growth in the number of biomedical databases. Day (1997) observed that the reputed literature databases like Medline and the Science Citation Index cover only two percent of scientific journals from developing countries. To increase the visibility, access, and quality of the health science literature in the Latin American and Caribbean region, a database called LILACS (<https://lilacs.bvsalud.org>) was developed in 1984. The database covers scientific articles from many well-known health science journals published from 19 Latin American and Caribbean countries. The database also indexes scientific books, monographs, doctoral theses, conference papers, scientific reports, and governmental communications. The motive of developing LILACS was under-representing Latin American and Caribbean health science literature in international databases. Giri and Das (2011) reported creating an abstracting and citation database based on the articles published in Indian journals related to biological sciences, health sciences, and agriculture.

In 2001, the Indian MEDLARS Centre designed and developed a bibliographic database based on the Indian biomedical literature called IndMED, the Index to Indian Biomedical Journals. The IndMED was developed in line with the MEDLINE database of the National Library of Medicine, USA. It started indexing with 75 Indian medical journals from 1985. (Singh et al., 2003).

Alam et al (2012) presented an experimental prototype of a web portal to access space science grey literature called SpaceGL to address the difficulty in identifying and accessing the Indian grey literature in space science. The system was completely developed on open-source software tools and acted as a central hub for collecting and disseminating Indian space science grey literature.

The Indira Gandhi Institute of Development Research, Mumbai, developed an online indexing database of articles, books and conference papers based on the information published in Indian Social Science journals known as Open Index Initiative (OII). The OII was compiled to address the scarcity of Indian social science literature in International databases (Manjunath & Sangam, 2005).

The Informatics India, Bengalure developed a comprehensive bibliographic database of journal articles in all the disciplines called J-Gate. The project was started in 2001 and today, J-Gate is the largest database for open access and subscription-based journals in the domains of agriculture & biological sciences, arts & humanities, basic sciences, biomedical sciences, engineering & technology, social & management sciences. (Sathyanarayana,2008).

Sukula (2006) pointed out the importance of developing knowledge databases indigenously in India and discussed the factors that necessitates the database creation in the country.

Munnolli (2009) observed that access to thousands of medical information resources produced every year is limited to the authors and their affiliated organizations. He recommended to resolve the issue by applying the modern Information and Communication Technologies.

In order to fill the gap of non-availability of health and biomedical journals published in the region in the international indexing and abstracting sources, the World Health Organization's Regional Office for the Eastern Mediterranean (EMRO), developed an indexing database called Index Medicus for the Eastern Mediterranean Region (IMEMR). The database development started in 1987, and in 1999, the Index was published in five printed volumes. Of the 408 journals indexed in the IMEMR, only 181 journals were published in electronic format. The ultimate goal of these indexes is to create a global index medicus that can bridge the gap resulting from lack of indexing of "third world" biomedical literature in MEDLINE and other international systems.