**A Proposal for the Design and Development of a National Literature Database on Communication Disorders**

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**Abstract**

*India has been contributing dynamically to the global scholarly literature on communication disorders in the form of articles in scientific journals, test/ therapy materials, books and conference papers. However, there is a lack of a common platform providing access to the entire spectrum of studies carried out in the country in the field of communication disorders. This paper discusses the design and development of a web based database on Indian scholarly literature on communication disorders using open source tools. The topic of discussion include the objectives of the database, its importance and implications, materials and methods for developing the database and the hardware and software system requirement.*

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 publications 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 across the world.

1. **Need for the Study**

Corresponding to the growth in the published literature in different branches of knowledge, thousands of literature databases have been developed across the world. Majority of these databases are international in nature covering the scholarly works reported in international journals. These include general databases covering all the fields of knowledge such as Web of Science and Scopus, and specialized databases such as MEDLINE, EMBASE, Cancelit and PsycInfo in the field of health sciences. Only a few databases are operating at the national level in India such as Indmed, a database covering the scientific literature of 100 medical journals published from the country.

The field of communication disorders deals with the disorders related to speech and hearing and considerable amount of research is taking place on various aspects of communication disorders worldwide. In India also many studies are being conducted in the field and the country has been contributing dynamically to the global scholarly literature on communication disorders. However, there is a lack of a common platform where the researchers can access all the studies carried out in the country in the field of communication disorders. There is only one database pertaining exclusively on the scientific literature on communication disorders, namely COMDISDOME developed by M/s Proquest Incorporation, which is international in coverage but with meagre representation of Indian studies. This paper addresses the design and development of a web based database on Indian scholarly literature on communication disorders using open source tools.

1. **Objectives of the Study**

The objectives of the study are the following.

1. To collect, preserve and archive Indian scholarly literature on communication disorders.
2. To design and develop an open source software based platform for the Indian literature on communication disorders.
3. To serve as a single entry point to access the Indian literature on communication disorders.
4. To provide organized access and facilitate easy retrieval of resources.
5. To facilitate an online gateway of Indian literature on communication disorders.
6. To create and develop metadata contents and facilitate searching and browsing of the multimedia contents.
7. To facilitates information sharing among users through notification, file sharing and co-operative document preparation
8. To facilitate quantitative analysis of Indian literature on communication disorders
9. To act as a resource discovery tool on communication disorders in India
10. **Importance and Implications**

The present study is significant in the context of the lack of a database on Indian studies on communication disorders. The development of a database based on Indian studies in the field of communication disorders is expected to have the following implications:

1. Help in preservation of the Indian literature on communication disorders, especially those which are available only in print format at present.
2. Help the researchers in identifying the gap in research and avoiding duplication in research in the area of communication disorders in the India
3. Assist the decision makers in investing funds for the research in the area.
4. Promote education and research on communication disorders in India
5. Enable the researchers in the field to keep abreast of the developments in the field
6. Facilitate wider accessibility, visibility and distribution of Indian literature
7. **Materials and Methods**
8. Subject Coverage and Classification

The proposed database will include both bibliographic and full text Indian literature in the field of communications disorders with focus on speech-language pathology and audiology. The resources will be classified into the following broad topics derived according to the Dewey Decimal Classification System, the world’s most widely used knowledge organization tool: (a) Articulation / Phonological Disorders, (b) Augmentative and Alternative Communication, (c) Clinical Audiology, (d) Communication Sciences & Disorders, (e) Diagnostic Audiology, (f) Hearing Science, (g) Language Development & Disorders, (i) Motor Speech Disorders, (j) Neuroscience for Communication Disorders, (k) Pediatric Audiology, (l) Phonetics and Linguistics, (m) Rehabilitative Audiology, (n) Speech / Language Intervention, (o) Speech and Hearing Science, (p) Speech Pathology Assessment / Diagnosis, (q) Stuttering / Fluency, (r) Swallowing / Feeding Disorders / Dysphagia.

1. **Categories of Resources**

The database will include the following categories of publications in both print and electronic formats.

1. Journal articles
2. Books and book chapters
3. Conference papers
4. Test/therapy materials
5. **Identification of published studies**

The studies on communication disorders published in the country under the above categories will be identified by the following ways.

1. Conducting a questionnaire survey among the faculty and staff of the Speech and Hearing Institutions recognized by Rehabilitation Council of India regarding their scientific publications.
2. Examining the published issues of the Indian journals on Speech and Hearing namely, AYJNIHH-Journal of Communication Disorders, Journal of All India Institute of Speech and Hearing, Journal of Indian Speech and Hearing Association , Student Research at AIISH: Audiology, Student Research at AIISH: Special Education, Student Research at AIISH: Speech Language Pathology.
3. Examining the published issues of the allied Indian journals in the field of communication disorders namely, [Disability CBR & Inclusive Development](http://dcidj.org/issue/archive), Indian Journal of Applied Linguistics, Indian Journal of Clinical Psychology, Indian Journal of Disability *&* Rehabilitation, Indian Journal of Otolaryngology and Head and Neck Surgery, Indian Journal of Otology, International Journal of Dravidian Linguistics, Journal of Disability Studies, [Journal of Rehabilitation Council of India,](http://www.rehabcouncil.nic.in/writereaddata/journal%20vol%206%20103.pdf) Journal of the Acoustical Society of India, Language in India, The Journal of rehabilitation in Asia, Journal of Disability Management and Rehabilitation.
4. Examining various published proceedings of the conferences organized in the field of communication disorders and allied fields in the country.
5. Verifying the official documents such as Annual Reports of the recognized Speech and Hearing institutions in the country

The Indian studies on communication disorders published in international journals will also be identified and listed by conducting a comprehensive search in the following bibliographic databases covering the field of health sciences.

1. Comdisdome
2. PubMed
3. Rehabdata
4. Scopus
5. Web of Science
6. **Validation of the Resources**

The resources selected to be included in the database will be validated by a Speech and Hearing consultant.

1. **Selection of Software Application**

A suitable open source software application will be identified for building the database. For this the features of three most heavily used open source software applications in the field of information management as per the Registry of Open Access Repositories (ROAR 2016), namely E-Prints, Fedora and D-Space will be evaluated using the Criteria Based Software Evaluation Checklist developed at the Software Sustainability Institute, University of Edinburg, UK according to the ISO/ IEC 25010:2011-Software engineering (Jackson 2011).

1. **Design and Development of the Database Platform**

The selected software application will be customized as per the requirements including interface design, database integration & coding, and development of search system.

1. **Metadata creation**

Metadata are the elements for describing information resources in a collection. In order to index and describe the resources in the database, the following metadata from the 15 set Dublin Core Metadata Set, an international standard for information resource description standardized as ISO 15836-2003, ANSI/ NISO Z39.85-2007, and IETF RFC 5013 (DCMI n.d.) will be created: Contributor, Coverage, Description, Year of Publication, Format, Publisher, Subject and Title. Of these, descriptive metadata will be created by a Speech and Hearing consultant and the remaining by the library professionals of the project team.

1. **Populating the Contents**

The metadata created will be uploaded to the database developed using the bulk upload option in the database. Wherever available, the full text of the resources will be incorporated in the database. In this regard, the India publishers will be contacted directly by sending formal notice of intention and a full description of the project. In case of articles published in the international journals, the Open Access policy of the concerned journal publishers will be verified with the help of Sherpa/ RoMEO, a searchable database of publisher's policies regarding the self- archiving of journal articles on the web and in Open Access repositories (SHERPA/RoMEO n.d.).

1. **Setting up of User Authentication**

Only the authenticated users will be permitted to access the contents of the database. A user login/ password system will be set up for this. Also, a set of access policies will be developed.

1. **Trial running and finalization**

The materials collected will be uploaded onto the database and trail running of the system will be carried out. The errors, if any, will be rectified and the system will be finalized.

1. **Hardware and Software system requirement**
2. Computer with latest Intel processor, 4 GB RAM and 2 TB storage capacity, (b) Open source software for Information Management, (c) Apache, (d) MySQL, (e) Ubuntu-Linux Operating System and (f) PHP.

**Conclusion**

Literature databases, the organized collection of full-text as well as bibliographis information are considered as the most important tools for identifying the published literature pertaining to a fdield of knowledge. The development of a national level literature databases in the fild of communication disorders will facilitate visibility for a number of less circulated and print based publications.

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