

## **Materials and Methods**

The following materials and methods were used for carrying out the project work.

### **Determining of subject domains and resource types**

The domain of communication disorders is basically constituted of two subject fields: audiology and speech-language pathology. The scholarly resources related to both the subject fields published in the country were broadly categorized into the following types:

- a. Journal Articles
- b. Books
- c. Book Chapters
- d. Conference Papers

### **3.2. Collection of Bibliographic details of Published Works**

Various approaches and strategies were followed in collecting the publication details as detailed below as there is no single directory listing all of them.

- a) The institutions offering higher education and research programmes on communication disorders in India were identified from the official website of the Rehabilitation Council of India (RCI), the regulatory body on education and training in the field of rehabilitation of people with disabilities in the country. In turn, each of these organizations' websites was visited to find out information regarding the journals, books, and conference proceedings published, if any, by them as well as the scholarly works published by the faculty, staff and students of these organizations in the form of journal articles, books, book chapters and conference papers. Official documents such as annual reports of these organizations made available on the websites were checked for collecting the required information. From the available annual reports, the details of individual scientific works published were collected. Also, a list of Indian journals and conferences in which the academic

community in these organizations publish their works (preferred journals for publishing their works) were compiled. The complete issues of the journals in which the scientific community published their articles and proceedings of all the serial conferences in which their presentation details available were collected.

- b) The Directory of Open Access Journals (DOAJ) and the Directory of Open Access Books (DOAB) were searched for relevant scholarly works published from the country.
- c) J-Gate, a literature database of 49,000 journals, was searched for peer-reviewed Indian journals in the field of health sciences
- d) A search was also conducted for the Indian health science journals in the National Library of Medicine's (NLM) Catalog which provides access to NLM bibliographic data for over 1.4 million journals and books audiovisuals, computer software, electronic resources, and other materials.  
  
India [country] AND ncbi journals [ All Fields]
- e) An online questionnaire was developed to contact the individual speech and hearing professionals working in different organizations across the country and collect their publication details.

### **3.3. System Design and Development**

COMDISDOME, the only internationally available literature database related to communication disorders was reviewed and a list of major functionalities and features required for the proposed Indian Literature on Communication Disorders (ILCD) database was prepared.

DSpace and EPrints, the two most heavily used open source tools for developing web-based platforms for publication content and institutional digital repositories as per the Registry of Open Access Repositories ("Registry of Open Access Repositories," 2016) were short-listed for developing the ILCD and cross-checked for the required functionalities and features.

They were further evaluated for additional features based software evaluation checklist developed by Bankier and Gleason (2014) was used for evaluation and selection.

Several supporting open-source software applications were chosen and integrated with the software selected for developing the database.

After the requirements and the specification of the proposed system were finalized, an Analysis Model consisting of Data Flow Diagrams (DFDs) and Entity-Relationship Diagram (ERD) was developed using the Visual Paradigm UML software.

### **3.4. Customization and Development of the Database Platform**

The selected software application was customized as per the requirements and the database was developed. The system thus developed was put on test, and the errors rectified.