

## Data, Information and Knowledge

Data is the plural of datum, although the singular form is rarely used. Depending on the context, data can be used in the plural or as a singular word, meaning a set or collection of facts. It has not been processed for use. It is a series of disconnected facts and observations. Here “unprocessed” might be understood in a sense that no specific effort has been made to interpret or understand the data. They are the result of some observation or measurement process.

The verb ‘inform’ normally is used in the sense to communicate (i.e., to report, relate, or tell) and comes from the Latin verb informare, which meant to shape (form) an idea. Information is the end product of data processing. Knowledge is the end product of information processing. In much the same way as raw data are used as input, and processed in order to get information, the information itself is used as input for a process that results in knowledge.

Knowledge is the general understanding and awareness garnered from accumulated information, tempered by experience. In other words, Knowledge is understood information. It is intangible compared to information or data as it is what an individual take from information and data, and what they incorporate into their beliefs, values, procedures, actions, etc. It is heavily internally oriented, understood completely only to the person possessing it. Knowledge is either explicit or tacit in nature. Explicit knowledge is the articulated knowledge, expressed and recorded as words, numbers, codes, mathematical and scientific formulae, and musical notations. Tacit knowledge on the other hand, is the knowledge acquired through experience. It is not so easily expressed. It is highly personal, hard to formalize and difficult to communicate to others.

In everyday discourse, the distinction between data and information, on the one hand, and between information and knowledge, on the other, remains typically vague. At any given moment, the terms data and information will be used interchangeably; whereas at another, information will be used interchangeably with knowledge.



## **Sources of Information**

Information is processed data. Information can come from virtually anywhere – media, blogs, personal experiences, books, journal and magazine articles, expert opinions, encyclopedias, and web pages – and the type of information you need will change depending on the question you are trying to answer. An entity which provides you information is known as source of information. Understanding the nature and category of information sources is important for a user who is searching various information sources to fulfill his information requirements.

Based on the physical format, the sources of information can be divided into:

- a. Traditional Information Sources or Print-based Information Sources
- b. Electronic Information Sources.

The sources of information are also divided into Primary, Secondary and Tertiary sources of information based upon the nature of content. By understanding the unique characteristics and features of each, the users will be able to quickly identify them and use, ultimately helping themselves to become more effective learners.

### **Primary Sources of Information**

Primary sources are original materials on which other research studies are based. Primary sources report a discovery or share new information. They present first-hand accounts and information relevant to an event. They present information in its original form, not interpreted or condensed or evaluated by other writers. They are usually evidence or accounts of the events, practices, or conditions being researched and created by a person who directly experienced that event. Primary sources are the first formal appearance of results.

The types of information that can be considered a primary source may vary depending on the subject discipline, and how the material is being used. In the humanities and the arts, a primary document might be an original creative work. It might be a part of the historical record written about, or in proximity to, an event. In the sciences, it might be a publication of original research.

The major examples for primary information sources in scientific field are:

1. Journals
2. Conference papers/ proceedings
3. Theses/ Dissertations
4. Technical reports
5. Patents

## 1. Journals

A journal is a serial publication published at regular intervals under a common title and it contains a collection of articles usually written by scholars in an academic or professional field. This is a main type of publication in which scientific research is reported. Most journals are highly specialized, although some of the oldest journals such as *Nature* publish articles and scientific papers across a wide range of scientific fields. The journals are normally being published by learned societies/ professional association, individual scientific organizations and by commercial publishing companies. For e.g. *The American Journal of Speech-Language Pathology* is a scientific journal published by a professional association by name American Speech-Language-Hearing Association, *The Journal of All India Institute of Speech and Hearing* is published by a scientific organization, the All India Institute of Speech and Hearing and *International Journal of Audiology* is a journal published by a commercial publishing company by name Taylor and Francis.

The major components of a journal are:

- a. Editorial Article
- b. Research Articles
- c. Letters to the Editor
- d. Book Reviews

Depending on the frequency of publication, the journals are categorized into weekly, fortnightly, monthly, bi-monthly, quarterly, half yearly and yearly.

The major personnel involved in publishing a journal are:

- a. Publisher: The person or the organization responsible for publishing a journal.
- b. Authors: The professionals who contribute articles to the journal
- c. Editors: The persons who are responsible for correcting, editing and managing a journal. (*The editors are known in various designations such as Chief Editor, Associate Editors, Assistant Editor etc. The group of editors working for a particular journal is known as Editorial Board headed by a Chief Editor*).
- d. Peer-reviewers: The subject experts who review the manuscripts submitted to a journal for publication.

#### **Journal workflow:**

1. The publication process starts with a researcher submitting a manuscript to a journal. Initially, the manuscript will be reviewed by the Chief Editor or an editorial board member assigned by him to check whether the subject matter of the manuscript matches with the scope of the journal.
2. In case the manuscript matches with the subject scope of the journal, it will be accepted and taken for further needful. Otherwise, the manuscript will be rejected and the same will be intimated to the author.
3. The initially accepted manuscript will be send for a process called peer reviewing in which the experts pertaining to the area of manuscript content will review the manuscript for the suitability of publication. The peer-reviewing is of the following three types:  
Single-blind review: The names of the reviewers are hidden from the author. This is the traditional method of reviewing and is the most common type by far. The advantage of single blind review is that the reviewer anonymity allows for

impartial decisions. i.e. the reviewers will not be influenced by the authors. The disadvantages include the concern of authors that reviewers in their field could delay publication, giving the reviewers a chance to publish first. Also, the reviewers may use their anonymity as justification for being unnecessarily critical or harsh when commenting on the authors' work.

Double-blind review: Here both the reviewer and the author are anonymous. The author anonymity prevents any reviewer bias, for example based on an author's country of origin or previous controversial work. Articles written by prestigious or renowned authors are considered on the basis of the content of their papers, rather than their reputation. However, the reviewers can often identify the author through their writing style, subject matter or self-citation.

Open-review: Here, the reviewer and author are known to each other. Some believe this is the best way to prevent malicious comments, stop plagiarism, prevent reviewers from following their own agenda, and encourage open, honest reviewing. Others see open review as a less honest process, in which politeness or fear of retribution may cause a reviewer to withhold or tone down criticism.

### **Publication Format:**

The major publication formats of the journal are:

- a. Print
- b. Electronic
- c. Hybrid (Both in print and electronic)

### **Journals in the field of communication disorders**

In the field of communication disorders, there are a number of reputed international, national and open access journals. The noted among them include the following:

#### National Journals

- a. The Journal of All India Institute of Speech and Hearing, an annual peer-reviewed journal published by the All India Institute of Speech and Hearing in print format.
- b. The Journal of Indian Speech and Hearing Association, a quarterly peer-reviewed journal published by the Indian Speech and Hearing Association in print and electronic format.

### International Journals

[ Please complete.....]

- a.
- b.
- c.

### Open Access Journals

- a.
- b.
- c.

## **2. Theses/ Dissertations**

Theses and dissertations are the primary sources in the form of reports of research conducted for the awarding of higher academic degrees. In some contexts, the word “dissertation” is used for part of a bachelor's or master's course, while “thesis” is normally applied to a doctorate, while in others, the reverse is true. They must include the results of original and significant investigation, and must be the candidate’s own work. The research is assessed by external examiners before the degree is awarded.

An electronic thesis or dissertation (ETD) is digital version of a thesis or dissertation that is available to the public via the Internet. Universities and colleges all over the world have been moving toward this type of publication since the beginning of 21st century with the wide spread availability of Internet and open source software for

managing the ETDs. A collection of electronic theses or dissertations is known as Digital Research Repository. The digital repositories are being developed either subject/ discipline based or individual Institution based. The Institution based repository is known as Institutional Repository.

The major features of digital repositories are the following:

- Social media tools: interactivity, discussion forum and comments
- Search and discovery tools
- Usage statistics and metrics
- Video with presentation of thesis
- Print on demand in book format

The advantages of the Digital Repositories include:

- Facilitate worldwide accessibility to the research
- Improve the presentation of research
- Direct examiners to access the document online for examination

Major digital repository in the area of communication disorders is the AIISH Digital repository, maintained and provided by the All India Institute of Speech and Hearing, Mysore.

The AIISH Digital Repository is one of the largest digital repository in the field of communication disorders, developed by the All India institute of Speech and Hearing, an autonomous organization under the Ministry of Health and Family Welfare, Govt. of India. The repository which was launched in the year 2008 contains the reports of various categories of research works carried out at the All India institute of Speech and Hearing since the inception of the Institute. Totally, there are more than 2,000 records in the repository and the total number of pages is more than one lakh.

### **3. Conferences Papers/ Proceedings**

Usually, a scientific meeting, convention or conference covers a range of topics within a subject area. Other commonly used terms include colloquium, convention, congress, discussion, symposia, seminar, meeting, session, summer school and workshop. These events are an important avenue for reporting new research or

developments in the form of discussion groups, lectures, presentations and/or poster sessions. The oral presentations at these meetings are called conference papers. The collective group of conference papers is called the conference proceedings. The papers presented may or may not be subject to editorial scrutiny. Conference papers can be: not published at all, published only in abstract form, published in advance of the conference as a preprint, published in book form, or as a special issue of a journal.

Some of the noted serial conferences taking place nationally and internationally in the field of communication disorders include:

- a. World Congress of the International Association of Logopedics and Phoniatics, organized by the International Association of Logopedics and Phoniatics, a worldwide organization of professionals and scientists in communication, voice, speech language pathology, audiology and swallowing.
- b. Annual Conference on the Management of the Tinnitus & Hyperacusis Patient, organized by the Department of Otolaryngology-Head and Neck Surgery and Department of Communication Sciences and Disorders, University of Iowa, USA,
- c. World Congress of Audiology, organized by the International Society of Audiology.
- d. ISHACON, the annual conference of Indian Speech and Hearing Association

#### **4. Technical Reports**

Technical reports describe the process, progress, or results of technical or scientific research. Include in-depth experimental details, data, and results. They may report internal research within an organization, or research done by an individual or organization under contract to a client. They can be: freely available, available only to members of an organization, only available by purchase. Sometimes the information from the report will also be published in a journal article, but more often, the report is the only source of the information. They often are difficult to verify and obtain as



issuing or funding agencies may not make their reports publicly available. However, many governmental technical reports are now being made available via the Internet.

Characteristics of technical reports include the following:

- Written by and for experts within a given discipline
- Contain the results of funded research
- Address the needs of the sponsoring organizations
- Difficult to locate and obtain

**AIISH Funded Research Reports (ARF)**, published by the All India Institute of Speech and Hearing, Mysore are good examples for technical reports in the field of Communication Disorders. Another example is the **Status of Disability in India-2012** published by the Rehabilitation Council of India.

## 5. Patents

The patent provides research information on new product or process. Once published, patent information is freely available, but rarely republished in journal articles. It is an official document, issued by the concerned national government granting property rights to the inventor or to the assignee (the latter is the owner of the patent). An Inventor is always a person—never a company or any other type of organization. An Assignee—the owner or holder of a patent—can be a person, or a company, or an organization, or a country. A patent grants the right to exclude others from making, using, offering for sale, selling, or importing the invention—a patent does not grant “The” right to engage in any of those activities. The assignee—the patent owner—may license the patent to another party.

The Indian Patent Office is administered by the Office of the Controller General of Patents, Designs & Trade Marks (CGPDTM). This is a subordinate office of the Government of India and administers the Indian law of Patents, Designs and Trade

Marks. The term of every patent in India is 20 years from the date of filing of patent application, irrespective of whether it is filed with provisional or complete specification.

The following are the examples of patents in the field of communication disorders:

- a. Title: Treatment of disorders secondary to organic impairments

Patent No.: US 6323242 B1

Abstract: A method for treatment of neuropsychiatric symptoms or disorders emanating from primary brain or systemic impairments includes administration of an effective dose of a dopamine, serotonin, and norepinephrine reuptake inhibitor to a human in need of such treatment. The preferred reuptake inhibitor is sibutramine.

Inventors: Peter Sterling Mueller

Original Assignee: Peter Sterling Mueller

- b. Title: Treatment of stuttering and other communication disorders with norepinephrine reuptake inhibitors

Patent No.: EP 1660185 A2

Abstract: Methods and medicaments for treating stuttering or another communication disorder, comprising administering to a patient in need of such treatment an effective amount of a selective norepinephrine reuptake inhibitor.

Inventors: Douglas Kenneth Kelsey

Original Assignee: Eli Lilly & Company

### **Secondary Sources of Information**

Secondary sources analyses, evaluates, interprets, re-packages, summarizes or reorganizes information reported by researchers in the primary literature. Secondary sources often lack the freshness and immediacy of the original material. However, the contents are easy to follow even by a non-expert in the field. Secondary sources include textbooks, monographs, handbooks, reference books such as encyclopedias, abstracts, dictionaries etc. and all the secondary sources are written by people based on the information from primary sources.

The secondary sources are helpful in the following ways-

- To get background information on your topic
- Information about important people (Who), events (What), places (Where), dates (When) and how they are related to your topic (How)
- Great definitions and ideas for Keywords which will help you find more sources on your topic

The major types of secondary sources are the following:

### **1. Encyclopedias**

Encyclopedias are collections of short, factual entries often written by different contributors who are knowledgeable about the topic. There are two types of encyclopedias: general and subject. General encyclopedias provide concise overviews on a wide variety of topics. Subject encyclopedias contain in-depth entries focusing on one field of study. The following is the world famous encyclopedia in the field of communication disorders.

**The MIT Encyclopedia of Communication Disorders** (*Explain please*)

### **2. Books**

A book is a set of written, printed, illustrated, or blank sheets, made of paper, parchment, or other materials, fastened together to hinge at one side, with text and/or images printed in ink. A single sheet within a book is a leaf, and each side of a leaf is a page. A set of text-filled or illustrated pages produced in electronic format for reading on a computer screen, smartphone or e-reader device is known as an electronic book, or e-book. UNESCO defined book as a bound non-periodical publication having 49 or more pages.

The books can be general or pertaining to a specific subject field. The following are the examples of books in the field of communication disorders:

- a. *Anatomy and Physiology for Speech, Language and Hearing* written by John A. Seikel, Douglas W. King and David G. Drumright.

This comprehensive book provides an in-depth study of anatomy and physiology for speech, language, and hearing. The text is designed to make anatomy and physiology accessible to the reader without slighting the content. Clinical information is integrated with everyday experiences in an attempt to underscore the relevance of the anatomical material. The text includes bulleted summaries throughout each chapter, study questions, and a pronunciation guide in the glossary to help readers master the material. Analogies and examples are used generously to illustrate the material. This user-friendly text is a must for anyone who wants to really understand the anatomy and physiology as it relates to speech, language, and hearing. The book is published by Singular Publishing Group Inc in English language.

- b. [ Please complete with 3-4 sentences.....]

c.

d.

e.

### **3. Dictionaries**

Dictionaries are the information sources in the form of print, optical discs, or web resource containing a selection of the words of a language, giving information about their meanings, pronunciations, etymologies, inflected forms, derived forms, etc., expressed in either the same or another language. Print dictionaries are of various sizes, ranging from small pocket dictionaries to multivolume books. The entries in the dictionaries are arranged alphabetically, allowing one to browse through the terms in sequence. All electronic dictionaries, whether online or installed on a device, can provide immediate, direct access to a search term, its

meanings, and ancillary information. The dictionaries can be General or Subject-specific.

Following are the examples for subject-specific dictionaries in the field of communication disorders.

a. **Dictionary of Communication Disorders** compiled by **David Morris**.

This dictionary provides clear and concise explanations of terms used in the field of speech, therapy pathology and relevant terms in related fields including augmentative, alternative communication, hearing, linguistic, medicine, phonetics/phonology and psychology/psychiatry. Those working with people who have communication disorders and those who may be returning to this field will find the explanations easy to understand. Terms include assessments, therapy programmes and current theories in these fields. The book is published by **John Wiley & Sons Inc.**

b. **Singular's Pocket Dictionary of Speech-Language Pathology** compiled by **Sadanand Singh** and **Raymond D. Kent**. This is an ideal pocket reference document which contains all of the terms and definitions pertaining to Speech-Language Pathology and provide information at-a-glance in an easy-to-carry format. The book is published by **Singular Publishing Group Inc.**

#### **4. Manuals/Handbooks/Guides**

Manual and handbooks are synonymous terms used to refer a technical communication document intended to give assistance to people using a particular system. They are usually written by a technical writer. User guides on the other hand are most commonly associated with electronic goods, computer hardware, software and test materials. Most of them contain both a written guide and the associated images. In the case of computer applications, it is usual to include screenshots of the human-machine interface(s), and hardware manuals often include clear, simplified diagrams.

The language used is matched to the intended audience, with jargon kept to a minimum or explained thoroughly.

Examples for manuals/ handbooks/ guides in the field of communication disorders are given below:

- a. Speech and language clinic handbooks
- b. Handbooks on hearing screening audiometer use, care and calibration
- c. Hearing screening training manuals
- d. Guidelines for hearing screening after the newborn period to Kindergarten age

### **Tertiary Information Sources**

Tertiary sources contain information that has been compiled from primary and secondary sources. Tertiary sources are typically the last to be published in the information cycle. Tertiary sources include chronologies, directories and bibliographies.

#### **1. Directories**

Directory is the information source that provides a list of names, addresses, or other facts arranged alphabetically or thematically with details.

*List of Training Institutions approved by RCI, New Delhi* published by the Rehabilitation Council of India, New Delhi is an example for a Directory in the field of Communication Disorders.

#### **2. Bibliographies**

Bibliography is a list of the books of a specific author or publisher, or on a specific subject. Examples include:

- a. List of books on Audiology and Speech-Language Pathology

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## **Electronic Information Sources with Special Reference to the Field of Communication Sciences & Disorders**

Electronic Information Sources are occupying a significant portion of the global literature particularly because of the developments in information technologies. Electronic publications -- all those publications which are in electronic or digital media -- are usually known as electronic sources of information. In other words, information sources accessible via computer and communication technologies. In early 1970s, most of the electronic sources were available on magnetic tapes and some were online. These were of course, mostly secondary sources such as bibliographical databases. Since then many developments have taken place. Today, electronic sources are available on CD-ROMs or on the Internet.

### **Types of Electronic Information Sources**

1. CD/DVD ROM based resources
2. Electronic journals
3. Electronic databases
4. Electronic books
5. Electronic Theses and Dissertations (ETDs)
6. Digital research repositories
7. Digital libraries
8. Internet websites
9. Electronic mail data
10. Online Public Access Catalogues
11. Web-based Newsgroups
12. Web-based Subject Gateways
13. E-Pictures/Photographs
14. E-Newspapers

A description of the electronic information resources that are relevant for speech-language pathologists and audiologists are discussed below.

## E-journals

The term electronic journal or “e-journal” referred to journals that are prepared and distributed electronically and they may or may not have a print counterpart. Ashcroft and Langdon (105) defines an electronic journal as “a journal, including indexing and abstracting services, provided by any electronic means, e.g. Internet, CD-ROM, although not necessarily exclusively by electronic means”. Whalley has made a distinction between a 'pure' electronic journal, which is a journal that has been set up as a totally electronic, peer-reviewed journal, and a 'hybrid' electronic journal that has versions both in electronic and paper formats.

The e-journals in the field of communication disorders are mainly of the following categories: (a) Subscription-based journals (b) Open Access Journals. The major e-journal publishers in the field of communication disorders are American Speech-Language-Hearing Association, Informa HealthCare, Elsevier, John Wiley & Sons, Sage, Springer and Cambridge University Press.

The major subscription-based journals are the following:

- a. International Journal of Audiology published by .....
- b.
- c.
- d.
- e.
- f.

The major open-access journals are the following:

- a.
- b.
- c.



d.

e.

f.

## **E-books**

E-books are the electronic equivalent of any book formatted for on-screen reading. Merriam-Webster dictionary defines e-book as a book composed in or converted to digital format for display on a computer screen or handheld device. Cambridge dictionary defines it as a book that is published in electronic form, for example on the Internet or on a disk, and not printed on paper. The major advantages of e-books are: portability, saving space, convenience, saving money and time, and ease-of-use.

The major e-book collections relevant in the field of communication disorders are discussed below.

### **E-book Central**

This is one of the best collection of e-books published by Proquest Co. The E-book Central is produced by merging two biggest E-book collections namely, E-Book Library (EBL) and ebrary. The Ebook Central launched in January 2017 contains thousands of e-books on communication disorders and related fields.

### **Directory of Open Access E-books**

The Directory of Open Access Books is a service of OAPEN Foundation an international initiative dedicated to Open Access monograph publishing, based at the National Library in The Hague. The primary aim of DOAB is to increase discoverability of Open Access books.

### **Google Books**

The Google Books provide access to full-text books that are out of copyright and facilitate viewing of excerpts from books that are still under copyright. Users can make use of the "Find this book in a library" link to locate a copy at a local library.

The specific examples for e-books pertaining to the field of communication disorders are the following. (Please write the details of a few)

- a. ....written by .....published by ..... The book is originally published in print format and later converted to e-format.
- b.
- c.
- d.
- e.

## Online Encyclopedias

### International Encyclopedia of Rehabilitation

The International Encyclopedia of Rehabilitation is an online encyclopedia developed by the Center for International Rehabilitation Research Information and Exchange (CIRRIE), The University at Buffalo, State University of New York, USA. On its completion, the encyclopedia will include four hundred articles on rehabilitation and disability topics. The mission of the Center for International Rehabilitation Research Information and Exchange (CIRRIE) is to facilitate the sharing of information between rehabilitation researchers in the U.S. and those in other countries.

## Bibliographic databases

A **bibliographic database** is an organized digital collection of references to published literature, including journal articles, conference proceedings, reports, government and legal publications, patents, books, etc. Many bibliographic databases

have records with abstracts or brief summaries of the articles. Some records have links to the full text or entire content of whole articles as they appeared in the periodical. Many bibliographic databases are subject related.

The following are the bibliographic databases that are relevant in the field of communication disorders.

- a. COMDSIDOME
- b. Linguistics and Language Behavior Abstract (LLBA)
- c. RehabData
- d. PubMed

### **ComDisDome**

ComDisDome is a bibliographic database covering the communications disorders literature, with focus on speech-language pathology and audiology. In one convenient location, the database will quickly identify and connect to reliable information from multiple sources in the field, including journal articles and books, along with access to profiles of researchers working in this area.

ComDisDome will help users to stay current on the latest findings and trends in communications disorders research, improve patient communication and education, write research reports and grants, and locate and communicate with researchers in the field.

**Subject Coverage:** Major areas of coverage include: Audiologic Management, Audiology, Augmentative and Alternative Communication (AAC), Communication Mechanism and Systems, Electroneuronography (ENoG), Hearing Assessment, Hearing Conservation, Hearing Impairment, Hearing Science, Pediatric Audiology, Rehabilitative Audiology, Speech/ Articulation, Speech-Language Pathology.

**Update Frequency:** Monthly, with approximately 400 records added per update.

**Topic Guide:** The Topic Guide (available under the Thesaurus Tab from Search Tools) is a top-down view of the discipline's topic areas. It contains over 5600 topics and will assist in finding the best keywords to expand or narrow the search. The Topic

Guide is an unparalleled resource for acquiring a cohesive view of the discipline's subject areas and their inter-relationships. Terms selected from the Topic Guide are searched against all text fields of ComDisDome. For example, a search on "audiology" will retrieve records that include audiology in the Title, Abstract, or Descriptors field. For a search in the Descriptors field only, use Advanced Search or Command Search to search DE=audiology.

### **Linguistics & Language Behavior Abstracts (LLBA)**

Linguistics & Language Behavior Abstracts (LLBA) is a bibliographic database that indexes the international literature in linguistics and related disciplines in the language sciences. The database covers all aspects of the study of language including phonetics, phonology, morphology, syntax and semantics. Complete coverage is given to various fields of linguistics including descriptive, historical, comparative, theoretical and geographical linguistics. The database provides abstracts of journal articles and citations to book reviews drawn from over 1,500 serials publications, and also provides abstracts of books, book chapters, and dissertations.

**Subject Coverage:** Major areas of coverage include: Anthropological Linguistics, Applied Linguistics, Descriptive Linguistics, Discourse Analysis / Text Linguistics, Hearing and Speech Physiology, Hearing - Pathological and Normal, History of Linguistics, Interpersonal Behavior and Communication Language Classification, Language - Pathological and Normal Learning Disabilities, Lexicography / Lexicology, Mental Retardation, Morphology, Nonverbal Communication, Orthography, Writing Systems, Philosophy of Language, Phonetics, Phonology, Poetics / Literary Theory, Psycholinguistics, Psychometrics, Semantics, Semiotics, Sociolinguistics, Special Education, Syntax, Theory of Linguistics, Typology

**Update Frequency:** Monthly, with approximately 14,000 new records added per year

**Thesaurus Availability:** This database is indexed using a thesaurus of 3,700 terms. The thesaurus is available online.

## **REHABDATA**

REHABDATA, produced by the National Rehabilitation Information Center (NARIC), USA is the leading literature database on disability and rehabilitation. The database describes over 80,000 documents covering physical, mental, and psychiatric disabilities, independent living, vocational rehabilitation, special education, assistive technology, law, employment, and other issues as they relate to people with disabilities. The collection spans 1956 to the present. REHABDATA results may also include abstracts from the international research collection, originally developed by CIRRIE (Center for International Rehabilitation Research Information and Exchange). More than 120,000 documents are abstracted in this database. NARIC adds approximately 4,000 items to REHABDATA each year, including 1,000 international research documents.

Four main categories of documents are included: (1) reports, studies, and papers submitted by projects funded by the National Institute on Disability, Independent Living, and Rehabilitation Research; (2) articles published in rehabilitation-related periodicals; (3) international research originally collected by the CIRRIE project, and (4) commercially published books. Some non-print materials are also included.

## **PubMed**

PubMed® is a free online health and biomedical information database developed and maintained by the National Center for Biotechnology Information (NCBI), at the U.S. National Library of Medicine (NLM), located at the National Institutes of Health (NIH).

**Contents:** Nearly 25 million citations including: • Publisher supplied citations that will be analyzed to receive full indexing for MEDLINE if they are biomedical in nature • In-process citations that have not yet been analyzed and indexed for MEDLINE® • Indexed for MEDLINE citations of articles from about 5600 regularly indexed journals; MEDLINE makes up nearly 90% of PubMed.

## **Features**

- Sophisticated search capabilities, including spell checker, Advanced Search Builder, and special tools for searching for clinical topics
- Assistance in finding search terms using the MeSH (Medical Subject Heading) database of MEDLINE's controlled vocabulary
- Ability to store citation collections and to receive email updates from saved searches using PubMed's My NCBI
- Links to full-text articles, to information about library holdings, and to other NLM databases and search interfaces.

**Searching:** To search PubMed, type a word or phrase into the query box (e.g., a subject, author and/or journal). Then click on the Search button or press the Enter key. Optionally, combine search terms with connector words: AND, OR, or NOT using upper case letters. PubMed offers alternative searching options including the auto suggest drop down menu when entering words and often a Titles with your search terms box is available after a search.

## **Image and Animation Databases**

The major image and video databases in the field of health sciences including the subject field of communication disorders are given below.

### **HONmedia**

HONmedia is a unique repository of over 6'800 medical images and videos, pertaining to 1,700 topics and themes. This peerless database has been created manually by HON and new image links are constantly being added from the world-wide Web. HON encourages users to make their own image links available via the "Submit an image" service.

### **Open-i**

Open-i, which stands for Open Access Biomedical Image Search Engine is a service of the National Library of Medicine enables search and retrieval of abstracts and images (including charts, graphs, clinical images, etc.) from the open source literature, and biomedical image collections. Searching may be done using text queries as well as query images. Open-i provides access to over 3.7 million images from about 1.2 million PubMed Central® articles; 7,470 chest x-rays with 3,955 radiology reports; 67,517 images from NLM History of Medicine collection; and 2,064 orthopedic illustrations.

### **Primal Pictures**

Primal Pictures' are pioneering and award-winning multimedia 3D anatomy images used worldwide in healthcare education, training, practice, research and more. Primal Pictures delivers the highest quality and most medically accurate 3D model of the human body, along with best-in-class anatomy, physiology and clinical content. The Primal Pictures are published by Informa Business, a UK based company.

## **Fulltext Databases**

The major full-text databases in the field of communication disorders are CINAHL and Rehabilitation Reference Center, both produced by EBSCO.

### **CINAHL**

CINAHL which stands for Cumulative Index to Nursing and Allied Health Literature is a suite of databases on nursing and allied health literature. The literature covers a wide range of topics including nursing, biomedicine, health sciences, alternative/complementary medicine, consumer health, and 17 allied health disciplines speech-Language pathology, audiology and psychology. In addition to the journal literature, *CINAHL Database* provides access to health care books, nursing dissertations, selected conference proceedings, standards of practice, audiovisuals and book chapters. It includes full-text articles, legal cases, clinical innovations, critical paths, research instruments and clinical trials. Nurses, allied health professionals, researchers, nurse educators and students depend on the *CINAHL Database* to research their subject areas.

An essential tool for nursing and allied health literature, *CINAHL Database* provides an easy-to-use interface with basic and advanced search features and searchable cited references. *CINAHL Subject Headings* help users effectively search and retrieve information and follows the structure of the Medical Subject Headings (MeSH) used by the National Library of Medicine.

The CINAHL suit of databases is produced by EBSCO.

### **Rehabilitation Reference Center**

This evidence-based, point-of-care resource is for physical therapists, occupational therapists, speech therapists and rehabilitation professionals. With *Rehabilitation Reference Center*, therapists can access the most current information in their specialty so they can provide the best care to their patients. It is updated weekly with the most current information available about speech, physical and occupational therapy. Content is created using a strict evidence-based methodology and protocol focused on systematic identification, evaluation and consolidation of practice-changing information.

Content Includes: Nearly 800 clinical reviews Nearly 100 research instruments Information from AHFS on over 11,700 drugs and their manufacturers More than 9,800 exercise images Key reference handbooks. More than 3,000 relevant patient education topics in both English and Spanish Breaking news Relevant clinical updates.

Coverage Includes: Physical therapy, Occupational therapy and Speech therapy.

### **Electronic Thesis & Dissertation / Digital Research Repository**

An electronic thesis or dissertation (ETD) is digital version of a thesis or dissertation that is available to the public via the Internet. Universities and colleges all over the world have been moving toward this type of publication since the beginning of 21st century with the wide spread availability of Internet and open source software for managing the ETDs. A collection of electronic theses or dissertations is known as Digital Research Repository. The digital repositories are being developed either subject/



discipline based or individual Institution based. An Institutional Repository is defined as a digital collection of the intellectual output of students, faculty, and others who are members of the Institution.

**AIISH Digital Repository**

The AIISH Digital Repository is one of the largest digital repository in the field of communication disorders, developed by the All India institute of Speech and Hearing, an autonomous organization under the Ministry of Health and Family Welfare, Govt. of India. The repository which was launched in the year 2008 contains the reports of various categories of research works carried out at the All India institute of Speech and Hearing since the inception of the Institute. Totally, there are more than 2,000 records in the repository and the total number of pages are more than one lakh.

The major areas covered in the repository include Audiological Management, Audiology, Augmentative and Alternative Communication (AAC), Communication Mechanism and Systems, Electroneuronography (ENoG), Hearing Assessment, Hearing Conservation, Hearing Impairment, Hearing Science, Pediatric Audiology, Rehabilitative Audiology, Speech/ Articulation and Speech-Language Pathology.

The repository contains the following types of research reports.

- a. Postgraduate Research
- b. Doctoral Research
- c. Independent Research
- d. Aiish-Funded Research

The repository facilitates both basic and advanced search.

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## AIISH Digital Repository (*detailed note/essay: A few portions are a repetition of previous note*)

An electronic thesis or dissertation (ETD) is digital version of a thesis or dissertation that is available to the public via the Internet. Universities and colleges all over the world have been moving toward this type of publication since the beginning of 21st century with the wide spread availability of Internet and open source software for managing the ETDs. A collection of electronic theses or dissertations is known as Digital Research Repository. The digital repositories are being developed either subject/discipline based or individual Institution based. An Institutional Repository is defined as a digital collection of the intellectual output of students, faculty, and others who are members of the Institution.

The major advantages of an Institutional Research Repository are the following:

- Opening up outputs of the institution to a worldwide audience;
- Maximizing the visibility and impact of these outputs as a result;
- Showcasing the institution to interested constituencies – prospective staff, prospective students and other stakeholders;
- Collecting and curating digital output;
- Managing and measuring research activities;
- Providing a workspace for collaborative or large-scale projects;
- Enabling and encouraging interdisciplinary approaches to research;
- Facilitating the development and sharing of digital materials and aids
- Accelerates the dissemination of research information and provide maximum access to scholarly communication.
- Inexpensive

The major challenges in developing an Institutional Research Repository are the following:

- Lack of technological infrastructure to handle repository.
- Lack of academic or political willpower
- Resistance to change

## **AIISH Digital Repository**

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The major features of the repository are the following:

1. The AIISH digital repository is the only one of its kind in the field of communication disorders in the world.
2. The repository contains various types of research reports produced at the Institute. These include:
  - a. Postgraduate Research
  - b. Doctoral Research
  - c. Independent Research
  - d. Aiish-Funded Research
3. The major topics on communication disorders covered in the repository include Audiological Management, Audiology, Augmentative and Alternative Communication (AAC), Communication Mechanism and Systems, Electroneuronography (ENoG), Hearing Assessment, Hearing Conservation, Hearing Impairment, Hearing Science, Pediatric Audiology, Rehabilitative Audiology, Speech/ Articulation and Speech-Language Pathology.
4. The repository facilitates the following search options:
  - a. Basic search
  - b. Advanced search
  - c. Keyword search
5. In addition, the repository has browsing facility based on the following:
  - a. Subject

- b. Title
  - c. Author
  - d. Year
  - e. Guide
  - f. Resource
6. The repository is freely accessible from around the world.
  7. Access to the repository is based on username and password based and the users have to register with repository for availing the facility.
  8. The repository is built using a commercial software by name Equest.

#### **Advantages of the AIISH Digital Repository**

1. The repository which includes more than one lakh pages of research information on communication disorders is a unique source of grey literature in the field of communication disorders.
2. The repository content is openly accessible to user community including external users to the maximum extent possible.
3. The faculty, staff and students will get enhanced professional visibility as authors of the materials in the repository
4. The repository is not serving as a resource supporting classroom teaching as it does not contain lecture notes, concept illustrations, visualizations, models, simulations, course videos, and the like.

#### **Drawbacks of the AIISH Digital Repository**

1. The users need to register with the repository site for availing the service which is a time consuming process.
2. The repository contents are restricted from downloading. Only view option is available.
3. The repository does not have a provision for the authors to submit their research reports online.
4. The repository lacks the features of the modern digital repositories built on open source software such as Dspace and e-Prints.

5. The AIISH digital repository does not facilitate full text searching.



### **Electronic Resources in Medicine (ERMED)**

Electronic Resources in Medicine (ERMED) Consortium functioning under the National Medical Library (NML) of India is an initiative taken by Directorate General of Health Services (DGHS), Ministry of Health & Family Welfare (MOH & FW), Government of India to develop nationwide electronic information resources in the field of medicine for delivering effective health care. 70 state and centrally funded Government Institutions including all AIIMS are selected as its members. The members are divided into Level-I and Level-II on the basis of number of end-users in different institutes. There is no membership fee charged from members and the MOHFW has provided funds required for the purchase of electronic journals under the NML-ERMED consortium project. The consortium is coordinated through its headquarter set up at the NML. The consortium will continue to be expanded and updated on an ongoing basis and suggestions for relevant and useful content are welcome. 242 high quality online e-journals are presently purchased from 5 leading publishers:

- British Medical Journal Publishing
- Cambridge University Press
- Lippincott Williams & Wilkins
- Oxford University Press
- John Wiley

#### **Aim & benefits of ERMED e-journal consortium**

1. Round the clock instant online access to multiple users
2. Access to resources beyond the physical space and time
3. Availability of online journal literature to unreachable medical scholars working in different parts of the country.
4. Better management of information resources in electronic environment.
5. Reduction in hassles of archiving print resources and their management.

6. Fast, economic and efficient dissemination of e-Journal literature.

### **National Library and Information Services Infrastructure for Scholarly Content (N-LIST)**

The Programme entitled "National Library and Information Services Infrastructure for Scholarly Content (N-LIST), is an Initiative of Ministry of Human Resource Development (MHRD) under Information and Library Network (INFLIBNET) Centre, an autonomous inter-university centre (IUC) of University Grants Commission (UGC). The N-LIST programme provides access to e-resources to students, researchers and faculty from colleges and other beneficiary institutions through web server(s) installed at the INFLIBNET Centre, Gandhinagar, Gujarat.

#### **Access Mode**

Faculty, staff, students and researchers from eligible colleges covered under UGC Act and Non-Aided colleges are eligible to access e resources through the N-LIST project. Colleges, desirous of accessing e-resources, are required to register themselves with the N-LIST and the authorized users from colleges can access e-resources and download articles required by them through username and password from any across the globe.

#### **Subject Coverage**

The N-LIST covers all the disciplines viz. Pure Sciences, Social Sciences and Humanities including Linguistic and Languages. However e-resources in engineering, agriculture and medicine are not covered under the N-LIST programme.

#### **Resource Types**

The N-LIST includes more than 6000 e-books on various subject fields, bibliographic databases, web of science citation database and more than one lakh e-books on various subject fields.

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## **Characteristic features of Electronic Information Sources** (*The first portion is a repetition of previous note*)

Electronic Information Sources are occupying a significant portion of the global literature particularly because of the developments in information technologies. Electronic publications -- all those publications which are in electronic or digital media - - are usually known as electronic sources of information. In other words, information sources accessible via computer and communication technologies. In early 1970s, most of the electronic sources were available on magnetic tapes and some were online. These were of course, mostly secondary sources such as bibliographical databases. Since then many developments have taken place. Today, electronic sources are available on CD-ROMs or on the Internet.

### **Types of Electronic Information Sources**

1. CD/DVD ROMs
2. Electronic journals
3. Electronic databases
4. Electronic books
5. ETDs (Electronic Theses and Dissertations)
6. Digital research repositories
7. Digital libraries
8. Internet websites
9. Electronic mail data
10. Online Public Access Catalogues
11. Web-based Newsgroups
12. Web-based Subject Gateways
13. E-Pictures/Photographs
14. E-Newspapers

The major features the Electronic Information Sources which make them distinct from the traditional print resources are the following.

- a. Searchability: The electronic resources have tremendous search capabilities. Search based on titles, keywords, author, subjects, abstract, article, full text, can be executed to identify the needed resources.
- b. Hypertext: Hypertext is the most attractive feature of e-resources. It is the non-sequential (non-linear) means of accessing portions of texts. Hypertext capability of an e-resource will provide the user with a flexible learning environment in which the user can temporarily pause reading current material and look into some other material which is hyperlinked to it.
- c. Massive Storage: With electronic resources, we can store a large amount of information in just one media.
- d. Multimedia: The multimedia feature facilitates better visual prominence using animation or interactive graphics to make an interesting way of learning. Many web sites and e-resources have their animation or moving pictures to make their e-resources more interesting.
- e. Archival: The e-resources have the great possibility of recording and archiving the content for future use.
- f. Alerting Service: The electronic resources such as e-journals and databases which are published serially facilitate e-alert service through e-mail as well as through RSS feeds about the release of new content.
- g. Online First: This feature of an e-resource published serially, facilitates immediate publication of a research paper soon after its acceptance by the publisher.
- h. Digital Object Identifier: A digital object identifier (DOI) is a unique alphanumeric string assigned to an electronic resource in order to identify its location on the Internet.



- i. Personal registration & Individualized services: Many of the Electronic Resources facilitate personal registration and individualized services for their users.
- j. Flexibility: The e-resources facilitate flexibility in usage. They can be downloaded, printed, converted into other formats and communicated easily.
- k. Accessibility: They are easily accessible with computer and internet connection.
- l. Multiple Simultaneous Access: The e-resources can be simultaneously used by more than one user.
- m. Round the Clock Availability: The e-resources provide 24/7 accessibility and remote access to the user.
- n. Speed of Access: It takes some minutes or even seconds rather than hours or days to access the electronic resources.

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