

6 INFORMATION DISSEMINATION SERVICES

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Learning Objectives



Our hope is that after going through Unit 6, you will be able to

- ❖ Describe the techniques used for searching databases for effective retrieval
- ❖ Discuss the services that can be initiated for disseminating information to adult community and to research and programme teams engaged in adult education and learning
- ❖ Outline document delivery services available in India and abroad
- ❖ Use such services for acquiring documents not held in the small collection at the adult learning set up where you are working.

6.1 Introduction

Unit 6 introduces you to the practical aspects of information dissemination. It will familiarize you with the techniques for finding out databases and thereby effectively retrieving the desired material. Further, it will describe the services you can use for information dissemination to adult community and discuss some of the document delivery

services you can find in India and abroad. Our effort is to motivate you to use these services for obtaining documents not available at your adult learning set-up. Small libraries in adult education and learning can utilize such services for acquiring documents not held in their own small collections.

Let us now discuss some of search strategies.

6.2 Search Strategy

Search strategy is about formulating search statement for an effective retrieval and about deciding the databases as such suitable for searching and retrieval. It is all about series of operations and decisions starting from developing an understanding of user's needs to selecting appropriate databases for retrieval, formulating search statement by using suitable keywords, descriptors and phrases (reflecting user's requirements) coupled with or without Boolean operators, and the data fields on which to carryout the search. The role of the library is to mediate between the user and the information resources, working out a plan of action from amongst the various available options for database searching.

Retrieval performance is all about post-search operations involving evaluation of the search output for its relevance to the user's needs and revising search strategy in the light of the user's feedback.

6.2.1 User's Requirements

In mediated searching, understanding user's requirements is about bridging the gap between the 'expressed needs' and 'actual need'. The gap sometimes stems from the lack of understanding of the part of the user about terms and keywords used in the database to express a key concept under retrieval. The best approach to reduce this gap is to ask the user to provide a few references of documents that seem to meet his expressed requirements. You could use the keywords used to index such documents in the database to understand his 'actual requirements'. The second approach to reducing the gap is to expose the user to descriptors

in the thesaurus and to let him express his requirements using descriptors relevant to his topic.

6.2.2 Selecting Database

Selection of a database for retrieval depends upon the subject of the query and specialty of the database. It also depends upon depth and breadth of coverage of indexed resources in the database, coverage of indexed resources by regions and countries, and accessibility to database archive for retrospective searching and full-text searching.

6.2.3 Query Formulation Options

A search query can be simple or compound. In addition, you can advance a search by using Boolean, limiting, string, proximity and truncation operators and sets. We will now discuss each type of query formulation options.

- ❖ **Simple Query:** In simple query, you use only keywords (or descriptors taken from the controlled vocabulary). Sometimes, you may use a phrase in place of keywords in the simple query. In such a case, you will retrieve only records matching the phrase. However, you reduce the chances of finding records matching the query if phrase is quite long. In case, you use only keywords for expressing the query (i.e. without using any operator); the search output would comprise records containing one or more keywords matching the query. Thus, the greater the number of keywords in the query the larger would be size of the search output. There is no single formula for keeping the output small when there are too many keywords in query. Thus the tip to

searching nearly exact match is to keep the query as simple as possible but without losing specificity in expressing the query.

- ❖ **Compound Query:** One of the strategies to keep the search output (matching the query) small is to construct a compound query using Boolean operators .OR, AND, NOT. You can use them to group search terms to broaden or narrow the results of a search. Boolean searching is a method of combining search terms either to retrieve more documents (use OR as the Boolean operator) or a smaller and more precise set of documents (use AND or NOT as the Boolean operator). Most databases and search engines allow Boolean searching, but may also use special characters or commands. AND retrieves items in which both terms are found e.g. adult AND community. OR retrieves items in which either term is found e.g. adult OR community. NOT retrieves items in which the first term is present but the second term is not e.g. information NOT knowledge. In other words AND narrows a search, OR expands a search, and NOT excludes terms from the search.
- ❖ **Advanced Search:** Simple or compound search can be further refined by combining advanced search capabilities of the search engine such as limiting the search to specific fields in the record, grouping keywords in the query statement, using proximity operators, truncation features etc,
- ❖ **Limiting Search:** Many search engines provide the facility to limit the search to any one or more fields, say, title, author, descriptors,

language, publication year, and country of publication.

- ❖ **String Search:** Many search engines allow searching data fields for character strings that are not in the index. For example, character string ‘adult education and learning’ can be searched by employing string search technique. This facility is particularly useful in searching for specific characters.
- ❖ **Proximity Search:** Proximity operator between two terms is used to find records that contain both terms in the same field. For example, when searching for ‘adult WITH literacy’, the word and word literacy would both appear in the same search field. This operator can thus be used to make a search more precise than using the AND operator. Some search engines use the term ‘SAME’ in place of ‘WITH’ to represent proximity operator.
- ❖ **Order of precedence when using multiple operators:** Parentheses override the order of precedence when using multiple Boolean and/ or Proximity operators. The search statement “house* and (finance\$ or loan\$)” retrieves documents that contain some variant of the word house and either one (or both) of the terms in the parenthesis. You can use up to fifty search operators in a single search statement. The order of precedence for multiple operators would be as follows:
()
Same/ With
NOT
AND
OR

❖ **Truncation:** Truncation can be used in a number of different ways: (i) at the end of the word to retrieve all mentions of the word (singular and plural), all forms of a root in cases of irregular plurals, and to retrieve more than one character, and (ii) internal truncation or wildcard characters to retrieve alternate spellings of words. You may apply truncation at least after three characters. The truncation symbol * serves as a substitute for any string of zero or more characters. The wildcard symbol '?' serves as a substitute for any one character exactly. For example, the search for wom?n retrieves woman or women. One can use truncation

or wildcards anywhere in the search term except as the first character. The wildcard symbol \$ serves as a substitute for zero or one character.

\$ = zero or one character

* = Zero or more characters

? = one character only

Example of right side truncation

Lite* = Literacy, liter, literature, literate
(* = zero or more characters)

Educate\$ = Educate, educated (\$ = zero or one character)

Example of internal truncation

Computeri?ation = Computerization, computerization (? = one character only)

Colo\$r = color, colour (\$ = zero or one character)

6.3 Retrieval Performance

There are two parameters for evaluation of search output: (i) recall and (ii) precision. Any search output from a database comprises two types of records (i) hits (relevant records) and (ii) misfits (noise, irrelevant records). You can measure recall and precision based on number of hit records and misfit records retrieved from the database and based on relevant records not retrieved from the database. The search engine due to poor formulation of the search statement does not retrieve sometimes records relevant to a query.

6.3.1 Recall

Recall is a ratio of hits retrieved (total records retrieved-noise) to total relevant records held in the database i.e. With reference to the figure below recall is computed as (A/C). It is a measure of the ability of the retrieval system to retrieve (recall) relevant records from the database.

6.3.2 Precision

It is a ratio of relevant records retrieved (relevant hits = total records retrieved - noise) to total records retrieved (hits + noise). With reference to Figure 6.1, it is computed as (A/G). It measures the ability of the system to suppress noise in the search output.

	Retrieved	Not Retrieved	Total
RELEVANT	A (HITS)	B (MISSED)	C
NON-RELEVANT	D (NOISE)	X	
TOTAL	G	H	

Figure 6.1 Precision

You can obtain user feedback in terms of recall and precision taken as the basis for improving retrieval performance by suitably amending search statement in the query.

Activity 6.1

Search website <http://www.findarticles.com/p/advanced?tb=art> for articles on poverty alleviation published during 2000-2005. List only top 10 references and measure the precision of the search output.

6.4 Information Services

The libraries could use in-house databases as well as external bibliographic and full-text databases for organizing information dissemination services. In adult education and learning sector the constituencies that need library support and services are two: (i) adult community and (ii) academic and research teams planning and organizing adult education programs. The most common service that libraries have been offering over the years is the access to document collections. However, the expectations of both the constituencies from the libraries go far beyond the accessibility to internal collections. The adult community is more interested in getting useful information than just the documents. Given their low socio-economic status and their low literacy

level, they need practical and processed information useful in making informed choices or taking decisions on matters relating to their livelihood and living standard, and guarding themselves against exploitation and deprivation, etc. The other constituency in the adult education and learning sector, which comprises academic and research teams, needs services far beyond the accessibility to document collections. They need bibliographic information, condensed information, analytical information, repackaged information, and consolidated information and such other content-oriented information for understanding latest developments in the field, state-of-the-art in the subject, and complete overview of the topic.

6.5 Types of Library and Information Service

Broadly, libraries offer different types of library and information services that should be of relevance to both the user constituencies in the adult education sector. These services include i) Current Information, ii) Everyday Use Information, iii) Catching up information services, and iv) Exhaustive Information. Let us now discuss each type in somewhat more detail.

i) Current Information Services: Such services usually refer to keeping up to date with the latest literature published/information in a subject area for the adult community in rural areas ‘mandi’

(wholesale market) rates for farm produce, revision in loan rates from the banks, latest health and family planning programs, agricultural melas (fairs), etc constitute current information as it is crucial literature, store it first in the database, before disseminating it to the adult community. However, for the academic and research teams engaged in adult education and learning programs, the connotation of current information is different. To them it implies latest research papers and publications in journals, latest books and monographs in the field, pre-prints, etc. The purpose of such a service is to

understand current research trends in the field and to gain knowledge about the highest level of achievements in the field. For planning and organizing current information services, the libraries need to browse published and grey literature in adult education and learning, and compile the relevant data in the database for producing such services as Current Titles service (classified by subject) and Table of Contents service (organized by journal titles). In addition, there are also a) Selective Dissemination of Information (customized to individual's needs) and b) Electronic Clipping Service. About the latter two services, we will discuss a little more.

- a) Selective Dissemination of Information (customized to individual's needs):** In addition, the library can organize selective dissemination of information (SDI) wherein the current information is provided to the users on the select topics of interests to the users, and from select sources of information. The user feedback is an important pre-requisite in the SDI service as it helps in performance evaluation of the SDI service and introducing midcourse changes, if so required, in the user profile or the search query for improved performance.
- b) Electronic Clipping Service:** Electronic publishers provide electronic clipping service to individual users on select topics of their interest. Individuals need to register with the publishers for the service. They get in their mail box listings of research papers from current issues of journals and on the subject of their interest. This service is now a substitute for the

traditional current awareness services as well as SDI service.

ii) Everyday Information Service: It is about information needed for performing day-to-day activities such as conducting experiments, engineering operations in a factory, fabricating products, etc. Usually reference sources such as directories, handbooks, and encyclopedias are of used in giving such type of information services. The need for such type of information services for adult community is usually not very strong.

iii) Catching up Information Service:

In this service, complete picture on a particular topic is given in simple and short form to enable an individual to catch up and comprehend the developments in the subject since the time he lost touch in it. Such a service includes i) Popular write-ups on a subject/ topic on demand, ii) Contents that empower adult learners and enable them to understand the importance of information/ knowledge, and iii) Knowledge and information useful for economic activity.

iv) Exhaustive Information Service: Exhaustive information services are important for assessing and understanding overall developments in the subject. These services include literature search, bibliography compilations, and state of the art reports, critical reviews etc. You can customize such services to individual's needs and give them on demand. Coverage of information in such a service is exhaustive. Usually such services are of importance and relevance in knowledge creation and utilization and as such useful and relevant to adult education teams.

Activity 6.2

Explain the difference between current awareness service and selective dissemination of service.

6.6 Document Delivery Systems and Services

Libraries supporting adult education and learning programs are required to provide documents on demand or in support of pro-active services that they organize. Given the fact that the collections size of NGO libraries is usually not large, they may not be able to provide access to all documents on demand from their in-house collections. They will have to depend upon external document delivery systems for the purpose. Initially, before the advent of photocopying machine, libraries used to exchange documents in their holdings on demand on inter-library loan. However, with the advent of photocopying machines, photocopies have replaced the practice of lending original documents. The end users or user libraries get photocopies of documents for permanent retention. Subsequently, with the emergence of electronic publishing era and advent of ICT, Internet era, the libraries started sharing their resources by transmitting digital images of the print documents or sending electronic files of digital documents over the Internet.

In the literature, the terms 'inter-library loan' and 'document delivery' are used interchangeably. However, the two terminologies have specific and different connotations though they serve to meet the same end purpose. In inter-library loan, you can borrow only holdings of the library such as books, journals, reports, standards, etc., from one

library to another but for a limited period only. You need to return such documents to the lending library after the expiry of loan period. In inter-library loan, you never get documents for permanent retention. On the other hand, in document delivery, the end-user gets copies of the documents such as photocopies/ electronic images/ fax images/ electronic files for permanent retention.

6.6.1 Modes of Document Delivery Service

Document delivery means supplying documents on demand in either original or as copies of the original (copies in print or digital format) and delivered through mail/ courier or over communication networks. Document delivery to end users implies three types of operations: i) document identification, ii) document location, and iii) document procurement. Document identification requires verifying the bibliographical elements of the documents to ensure that details such as author, article title, source title, volume, and pages as given in the user request are correct. You can verify such details by searching the Web or the relevant databases. Document location implies identifying the library holdings the documents under reference. You may do this by searching union catalogues available from library networks. Document procurement implies writing to the relevant libraries/

service providers for delivery documents. There are several modes of document procurement.

- ❖ Requesting documents from the holdings library/ library networks
- ❖ Requesting documents from document delivery service providers
- ❖ Searching the Web for digital copies of the documents for free access

6.6.2 Document Delivery Service Providers

There are several document service providers in India and abroad. Their role is to provide copies of documents on

demand. The mode of copying may be photocopy, fax image, digital image, or duplicate electronic file. The delivery options are post-mail, courier, fax, or over the network. Unlike traditional libraries which give documents without charging any money, these delivery systems are commercial in approach and charge for providing document delivery service. These systems compete with each other in terms of speed of service, being exhaustive in terms of depth and breadth of information sources, and in terms of service costs. See Box 6.1 for a list of the service providers in India and abroad. You can obtain more information about their services by searching their websites.

Box 6.1 List of the Service Providers in India and Abroad

INDIA

- ❖ INFLIBNET Document Delivery System offers services in collaboration with the following set of libraries.
- ❖ Indian
- ❖ Banaras Hindu University, Varanasi
- ❖ University of Hyderabad, Hyderabad
- ❖ Indian Institute of Science, Bangalore
- ❖ Jawaharlal Nehru University, New Delhi
- ❖ Punjab University, Chandigarh
- ❖ Tata Institute of Social Science, Mumbai)
- ❖ NISCAIR Document Delivery Service
- ❖ National Institute of Rural Development, Hyderabad
- ❖ Institute of Rural Management, ANAND, Gujarat
- ❖ Tata Institute of Social Sciences, DEONAR, MUMBAI
- ❖ NASSDOC Document Delivery Service
- ❖ National Social Science Information Centre, M.S University, Baroda
- ❖ National Information Centre, SNDT Women University, Mumbai

FOREIGN

- ❖ British Library Document Delivery Service
- ❖ Canadian Institute for Scientific and Technical Information
- ❖ National Library of Australia

Activity 6.3

List using the Internet the terms and conditions for document delivery services offered by INFLIBNRT, NISCAIR, NIRD, NASSDOC.

6.7 Conclusion

After completing Unit 6 the learner would come to learn the techniques for searching databases for effective retrieval, plan and organize various services for disseminating information to adult community as well as to research and programme teams engaged in adult education and learning. This Unit would also educate learners about the institutional resources in India and abroad for obtaining full-text articles. Most NGO libraries may not have comprehensive collection of databases. In such cases, it will be advisable on the part of the adult

educators to use the services of online hosts or else use the Internet resources for information retrieval. The choice of services for information dissemination will depend upon needs of the target users, the level of their education and literacy, and their preferences for the media and the language for communication. The NGO libraries would need to use extensively the document delivery services for obtaining full-text documents. This is so because not all NGO libraries generally possess limited resources in their collection.

6.8 Apply What You Have Learnt

During completion of all activity sections of Unit 10, you would of course apply what you have learnt in this unit. In addition, you may also write a short account of how you plan to introduce some of information dissemination

services discussed in the unit at your adult learning set-up.

In this exercise, you will find very useful the list of some key words given in Box 6.2.

Box 6.2 Some Useful Keywords

Search strategy	Formulating search statement for an effective retrieval and deciding databases to be searched for retrieval.
Search statement	Keywords used for expressing search query with or without operators
Simple search	Keywords used for expressing search query without any operators
Advanced search	Keywords used for expressing search query using operators and placing operators in the query statement in prescribed order of precedence
Limiting search	Searching database on select indexed fields
Boolean operators	Boolean operators are .OR, AND, NOT. Boolean operators provide a method of combining terms either to retrieve more documents (use OR as the Boolean operator) or a smaller

	and more precise set of documents (use AND or NOT as the boolean operator).
Proximity search	Proximity operator 'WITH' or 'SAME' is used between two terms to find records that contain both terms in the same field.
Recall	The ability of the retrieval system to retrieve relevant records from the database
Precision	The ability of the retrieval system to suppress noise in the search output
Selective dissemination	Current awareness service customized to individual's of information needs
Electronic clipping service	Service provided by electronic publishers to individual users on select topics of their interest for receiving alerts on articles on the topics/journals of their interest
Document delivery systems	Individual or collaborating libraries of national importance providing documents on demand to end users for permanent retention against payment

