Reference Sources and Services

LIS 113

University of Ibadan Distance Learning Centre
Open and Distance Learning Course Series Development

General Editor: Prof. Bayo Okunade

Vice-Chancellor's Message

The Distance Learning Centre is building on a solid tradition of over two decades of service in the provision of External Studies Programme and now Distance Learning Education in Nigeria and beyond. The Distance Learning mode to which we are committed is providing access to many deserving Nigerians in having access to higher education especially those who by the nature of their engagement do not have the luxury of full time education. Recently, it is contributing in no small measure to providing places for teeming Nigerian youths who for one reason or the other could not get admission into the conventional universities.

These course materials have been written by writers specially trained in ODL course delivery. The writers have made great efforts to provide up to date information, knowledge and skills in the different disciplines and ensure that the materials are user-friendly.

In addition to provision of course materials in print and e-format, a lot of Information Technology input has also gone into the deployment of course materials. Most of them can be downloaded from the DLC website and are available in audio format which you can also download into your mobile phones, IPod, MP3 among other devices to allow you listen to the audio study sessions. Some of the study session materials have been scripted and are being broadcast on the university's Diamond Radio FM 101.1, while others have been delivered and captured in audio-visual format in a classroom environment for use by our students. Detailed information on availability and access is available on the website. We will continue in our efforts to provide and review course materials for our courses.

However, for you to take advantage of these formats, you will need to improve on your I.T. skills and develop requisite distance learning Culture. It is well known that, for efficient and effective provision of Distance learning education, availability of appropriate and relevant course materials is a *sine qua non*. So also, is the availability of multiple plat form for the convenience of our students. It is in fulfilment of this, that series of course materials are being written to enable our students study at their own pace and convenience.

It is our hope that you will put these course materials to the best use.

Prof. Abel Idowu Olayinka

Vice-Chancellor

Foreword

As part of its vision of providing   education for "Liberty and Development" for Nigerians and the International Community, the University of Ibadan, Distance Learning Centre has recently embarked on a vigorous repositioning agenda which aimed at embracing a holistic and all encompassing approach to the delivery of its Open Distance Learning (ODL) programmes. Thus we are committed to global best practices in distance learning provision. Apart from providing an efficient administrative and academic support for our students, we are committed to providing educational resource materials for the use of our students. We are convinced that, without an up-to-date, learner-friendly and distance learning compliant course materials, there cannot be any basis to lay claim to being a provider of distance learning education. Indeed, availability of appropriate course materials in multiple formats is the hub of any distance learning provision worldwide.

In view of the above, we are vigorously pursuing as a matter of priority, the provision of credible, learner-friendly and interactive course materials for all our courses. We commissioned the authoring of, and review of course materials to teams of experts and their outputs were subjected to rigorous peer review to ensure standard. The approach not only emphasizes cognitive knowledge, but also skills and humane values which are at the core of education, even in an ICT age.

The development of the materials which is on-going also had input from experienced editors and illustrators who have ensured that they are accurate, current and learner-friendly. They are specially written with distance learners in mind. This is very important because, distance learning involves non-residential students who can often feel isolated from the community of learners.

It is important to note that, for a distance learner to excel there is the need to source and read relevant materials apart from this course material. Therefore, adequate supplementary reading materials as well as other information sources are suggested in the course materials.

Apart from the responsibility for you to read this course material with others, you are also advised to seek assistance from your course facilitators especially academic advisors during your study even before the interactive session which is by design for revision. Your academic advisors will assist you using convenient technology including Google Hang Out, You Tube, Talk Fusion, etc. but you have to take advantage of these. It is also going to be of immense advantage if you complete assignments as at when due so as to have necessary feedbacks as a guide.

The implication of the above is that, a distance learner has a responsibility to develop requisite distance learning culture which includes diligent and disciplined self-study, seeking available administrative and academic support and acquisition of basic information technology skills. This is why you are encouraged to develop your computer skills by availing yourself the opportunity of training that the Centre's provide and put these into use.

In conclusion, it is envisaged that the course materials would also be useful for the regular students of tertiary institutions in Nigeria who are faced with a dearth of high quality textbooks. We are therefore, delighted to present these titles to both our distance learning students and the university's regular students. We are confident that the materials will be an invaluable resource to all.

We would like to thank all our authors, reviewers and production staff for the high quality of work.

Best wishes.
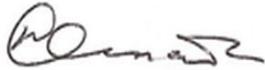
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Introduction to the Course Manual

The ultimate aim of any information system is to meet the information needs of its users. The user is central to the provision of information service. Consequently the success of any information service is more likely to be achieved by adjusting the services to meet the specific needs of the individual user. This explains why libraries and information systems all over the world acquire varieties of publications to meet the diverse needs of their users. Meeting users' needs in Library and Information Science (LIS) requires thorough understanding of the users as well as the sources of information and environment. In this case, the librarian will not only refer the information user to the sources, he also can play the roles of information sources by answering the users 'queries straight away. That's why reference service is defined as an information service, which involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources, by a member of the library staff.

The field of reference service in Library and Information Science (LIS) has become vast and dynamic in recent decades. Technological developments particularly the introduction of computer technology, communication technology, printing technology, reprography, etc., have added new dimensions to the role of librarians in the dissemination of information.

Following the introduction of ICTs, advances have been made not only in the format of reference sources but also in the manner of providing reference services. One can have direct access to computerized databases via terminals or the needed information can be made available to the client through internet in no time, irrespective of where the information is available.

Today the emphasis in libraries is shifting from 'acquisition of documents to 'access to information, thereby increasing the scope of reference service to, no limit extent.

This study session series presents discussion on the meaning, importance and attributes of information. It examines the information users and the kind of reference services and sources available and provides general criteria for evaluating reference sources. It also considers the benefits inherent in the application of Information and Communication Technologies (ICTs) to library services; the World Wide Web (WWW) and research resource on the Internet which make electronic references services possible. It discusses types and components of electronic reference services;

including virtual Reference Service and video conferencing, digital reference robots, collaborative digital reference service (CDRS) and procedure for establishing electronic reference service. It provides general criteria for databases. These series introduce students to information literacy and information seeking models.

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Study Session 1: Importance and Attributes of Information

Introduction

The objective of this study session is to examine the meaning, importance and attributes of information. This will lead us to the understanding of the needs and use of information as a basic tool of individual development in the information society.

Learning Outcomes for Study Session 1

At the end of this study session, you should be able to;

1.1   Define information

1.2   Explain the importance of information

1.3   Discuss the attributes of information?

1.1   Information

Information is defined as knowledge communicated or received concerning a particular fact or circumstance; news: information concerning a crime. It is knowledge gained through study, communication, research, instruction, factual data, etc.

Hence, information is used interchangeably as news, fact, data and knowledge. It is idea that is communicated. Information has also been broadly defined as an

occurrence or a set of occurrences which carries messages and which when perceived by the recipient through any of the senses, increases his state of knowledge.

Information is conveyed either as the content of a message or through direct or indirect observation of something.

That which is perceived can be construed as a message in its own right, and in that sense, information is always conveyed as the content of a message. Information can be encoded into various forms for transmission and interpretation. For example, information may be encoded into signs, and transmitted via signals.

Figure 1.1:*Information channels*

Source: *http://impresalavoro.org/mercato-online-italia-fanalino-coda-in-europa-digital-tax- non-buona-notizia/*

1.2.1 Importance of Information

- Increases the State of Knowledge
  Information increases the state of knowledge of a recipient. Information conveys knowledge. It enlightens the recipient about the true state of affairs, thereby increasing his state of knowledge
- Resolving uncertainty.
  Access to the right information clears
  Contact with complete information clears uncertainty and removes doubt.
- Value in decision making
- Valued judgement
- It informs its recipient
- Useful for research

- All published and unpublished knowledge about any given subject

Buckland (1991) has discussed the ambiguities of information when he characterised as:

a. **Information - as – process**
b. **Information – as – Knowledge**
c. **Information – as – thing**

Information is a process when it is performing the function of informing, which involves transmitting information from a source to a recipient. It is knowledge when it is performing the role of imparting knowledge to an individual, where it reduces uncertainty under both circumstances information is intangible. It becomes tangible when it is a thing or physical objects such as data or documents.

Although there is no exact definition of information, apparently there is a connection between data, information and knowledge. Aina (2004) quoting Rubin (1998) has provided a relationship between data, information, knowledge and wisdom as follows:

Box 1.1: Relationship between Data, Information, Knowledge and Wisdom
Data are raw and unprocessed, information is a processed data from which meaning arises and it is communicated, and knowledge is further processed information that is organized and interrelated and more broadly understood and applied. Wisdom is knowledge applied to the benefit of humanity**.**

It is a continuum, and it is also hierarchical. However the important point is that information is very crucial in the continuum. It is therefore not surprising that a wide range of people are involved in information activities. These are information professionals.

Information-as-a-thing is a physical object which is represented as data and documents. It is information that is recorded and may be in form of written documents, printed materials or digitised materials.

They appear in different formats such as books, periodicals, newspaper, diaries, letters manuscripts, tapes, compact disk, databases, artefact, microforms, etc. Thus, any activity that is concerned with the handling of information, such as creation,

searching, acquisition, organization analysis, storage retrieval, dissemination, etc, will be grouped together as information profession.

1.3   The Attributes of Information

To contribute to research, information as a variable must possess and display some attributes. These include:

- Relevance – information should be important to the matter at hand. the ability (as of an information retrieval system) to retrieve material that satisfies the needs of the user
- Verifiability - Information must be capable of being verified to ascertain the truth or correctness as by examination, research, or comparison:
- Comprehensiveness - the state of being complete and entire; having everything that is needed
- Conciseness- information expressing much meaning in few words; clear, succinct and unambiguous
- Timeliness- the quality or habit of being ready on time. Information should be provided when needed
- Availability - suitable and ready for use
- Accessibility
- Understandable - capable of being understood and
- Adaptability - the quality of being adaptable

These attributes confer on information its instrumental value. Instrumental value means the extent to which particular information contributes to the resolution of conflict or problem situation, clarification of doubt, the enhancement of decision making, accuracy or support of theory, a position or research result. For example, the amendment of a law does not completely invalidate an existing one.
But the specific aspects that have been amended are vital to the process of updating the existing law. If the amended law is available but not accessible to a researcher, it means the instrumental value of accessibility is lacking and needs to come to play for the amended law to be fully appreciated.

Summary for Study Session 1

At the end of this study session, you have learnt that:

1. Information is defined as knowledge communicated or received concerning a particular fact or circumstance; news: information concerning a crime. It is knowledge gained through study, communication, research, instruction, factual data, etc.

2. The importance of information are as follows:
   - Increases the State of Knowledge
     Information increases the state of knowledge of a recipient. Information conveys knowledge. It enlightens the recipient about the true state of affairs, thereby increasing his state of knowledge
   - Resolving uncertainty.
   - Access to the right information clears
   - Contact with complete information clears uncertainty and removes doubt.
   - Value in decision making

3. The attributes of information are as follows:
   - Relevance – information should be important to the matter at hand. the ability (as of an information retrieval system) to retrieve material that satisfies the needs of the user
   - Verifiability - Information must be capable of being verified to ascertain the truth or correctness as by examination, research, or comparison:
   - Comprehensiveness - the state of being complete and entire; having everything that is needed
   - Conciseness- information expressing much meaning in few words; clear, succinct and unambiguous

Self-Assessment Questions for Study Session 1

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 1.1 (Testing Learning outcomes 1.1)

Define information

SAQ 1.2 (Testing Learning outcomes 1.2)

Explain the importance of information

SAQ 1.3 (Testing Learning outcomes 1.3)

Discuss the attributes of information?

References

Aina, L.O.(2004) *Library and Information Science Text for Africa.* Ibadan : Third World Information Services, 368p.

Buckland, M. (1991) *Information and information systems*. New York: Praeger, 225p.

Study Session 2: The Information User

Introduction

In the last study session, you examined the meaning, importance and attributes of information which confer on information its instrumental value. In this study session you shall identify the information user, his information needs and the factors affecting his information needs. This will in turn enable you to understand the need for reference and information services which this course is mainly concerned with.

Learning Outcomes for Study Session 2

At the end of this study session, you should be able to;

2.1   Define and explain information usability?

2.2   Explain an information user?

2.3   Enumerate the factors affecting the information needs of a user?

2.1   Information Usability

Information usability is defined as the extent to which information product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

The user is very critical in the practice of librarianship. In other words, library and information profession revolve round users.

Thus it is important that the staff of a library always relate with the users in pleasant, friendly, courteous and efficient manner. This is because the user is the focal point of all the library and information services, as library primarily exists to satisfy the user. The mission statement of any library should be the provision of excellent services to its users.

According to **Ajidahun**(2004), "A library that cannot meet the information needs of its users in a moribund and anaemic information system because it has lost its vitality, honour and attractions.

Libraries, therefore, strive hard to assuage the intellectual and informational thirst and curiosity of their users by acquiring and processing various reading materials for the use of their patrons in order to justify their continual existence and relevance".

Figure 2.1 *information users*
Source*: http://thesheet.ng/debbie-ariyo-promoting-entreprise-development-among-young-nigerians/*

Information services exist because there are users whose needs must be satisfied. The information needs of users must be assessed, determined, acquired and organized for retrieval. There are a number of synonymous terms to represent the concept of user such as patron, clients, member, customers, etc.

The user is an important component in any information system. Almost everyone and every one at one or the other time make use of information and hence they are all users. Users are the important link in the information communication systems. The information systems exist to satisfy the information needs of the users depending on the extent of use of information.

The information handling activities are to be based entirely on the needs of the users. The information users have different needs for information depending upon their functions, responsibilities and duties.

The information users include government officials, legislators, parliamentarians, industrial entrepreneurs, researchers, lecturers, students, skilled workers in various sectors of production, grass-root level people and the general public. Information needs varies distinctly among these categories of users.

In-Text Question

_____ is defined as the extent to which information product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use Knowledge

    a. Information usability
    b. Librarianship
    c. Information channels
    d. Information

In-Text Answer

    a. Information usability

2.2   Who is an Information User?

The term user is all-embracing. It is used broadly to include all those who avail themselves of the service offered by a library. The term referred to all categories of people who are beneficiaries of library products and services. Various terms such as client, reader, customer, etc, may be used to describe the information user.

Therefore the information user is a person who is actively seeking access to knowledge/information and who when successful, obtains and uses the knowledge/information.

User can be grouped by subject/discipline or by the type of activities. Whittaker's categorisation can be further expanded as follows: general group, special users, handicapped users, non-literate users and non-reading users

2.2.1 General users

These are clients who use the library with the main purpose of expanding their general knowledge or who read for pleasure. They really do not have any specific subject in mind. They read newspapers, magazine, and both fiction and non-fiction books. These include: pensioners, children and young adults. This group also include the users of internet facilities in libraries.

2.2.2 Special Users

They often use the library purposely to advance knowledge in their subject disciplines. They are usually interested in subject fields in which they are working or studying. They include pupils and student researcher and lecturer, who are usually involved in the advancement of knowledge. Professionals who are executors and implementers of policies and also, policy makers and planners who formulates policies. The users in these categories are literate.

2.2.3 Handicapped users

These are users of the library that are handicapped in one form or the other. They are disabled, either physically or intellectually.

The physically handicapped are those users who have one disability or the other, like those who use wheel chairs, those who are visually-impaired or hearing-impaired and those that cannot physically get to the library for one reason or the other, like hospital patients and prisoners.

The intellectually handicapped are those that are mentally retarded. Deaf and blind users, crippled users, hospital patients, prisoners etc, are categorised as handicapped users.

2.2.4 Non-reading users

These are users who make use of library services other than reading, such as borrowing tapes, videocassettes, audiocassettes, films, projectors, renting the hall for one thing or the other.

2.2.5 Non-literate users

These are users who cannot read and write in any language, and those that are barely literate. They want to use the library to improve their literacy skills or even acquire reading skills. Artisans, farmers and many rural people fall into this category. In Africa, they constitute the largest proportion of information users.

This group of clients is often in need of information for social, economic and political development. This group also seeks health information.

The library often meets the needs of this group by organising book talks, lectures and audio-visual presentations. Public libraries often have to cooperate with the media and government information units to package information for this category of users.

The above categorisation is by no means clear-cut, as these groups overlap considerably. This categorisation represents the broad categories of users. However, in order for libraries to specifically provide services that will meet the needs of their users, there is a need to further delineate the various groups of library and information users into specific homogeneous groups, such as:

Children, pupils, students, adults, professionals researchers and lecturers. Others include: policy makers and planners, artisans, handicapped users such as hearing and visually impaired and the physically challenged.

Figure 2.2 *Non-literate users*
Source:*http://research.microsoft.com/en-us/people/indranim/*

2.3   The Attributes of Information User

The following are the attributes of information user:

1.   Information user must be faced with the need to make a decision
2.   He must possess information utilization capacity
3.   He must be able to access information
4.   He must be selective
5.   He must be analytical and evaluative
6.   He must be dynamic
7.   He must be skilful

Information users make use of the library for a variety of reasons. Some use library for specific reading, especially those preparing for examination, undergoing formal education and professional development, research and related needs.

Others use a library for recreation and entertainment, and yet a large number for meeting their current awareness needs or solving personal information problems.

In brief, it has been said that the user as an essential component of the information system is the most neglected item of attention. The information system has to take into consideration the information requirements of potential users.

The potential user may be defined as those who would provide a high volume and reasonable frequency of use. The use of information may occur without demand being expressed or even without a want being felt. Most of the information services are offered in anticipation of users demand rather than on their actual information need.

The way in which users (may be a scientist, engineer, technologist, manager, planner, etc.) make use of the information system at their disposal, the demand that they put to them, the satisfaction achieved by their efforts and the resultant effect on their further work are among the items of knowledge which are necessary for the wise planning of information systems and service aimed at satisfying their needs.

2.4   What is Information Needs?

Information need is an expressed desire by an individual or group to locate and obtain information to satisfy a conscious or unconscious need. The 'information' and 'need' in 'information need' are inseparable interconnection. Needs and interests call forth information.

The concept of information needs was coined by an American, Robert S. Taylor in his article "The Process of Asking Questions" published in American Documentation (Now is Journal of the American Society of Information Science and Technology)

Taylor attempted to describe how an inquirer obtains an answer from an information system, by performing the process consciously or unconsciously; he also studied the reciprocal influence between the inquirer and a given system.

According to Taylor, information need has four levels:

- The conscious and unconscious need for information not existing in the remembered experience of the investigator. In terms of the query range, this level might be called the "ideal question" — the question which would bring from the ideal system exactly what the inquirer, if he could state his need. It is the actual, but unexpressed, need for information.
- The conscious mental description of an ill-defined area of indecision. In this level, the inquirer might talk to someone else in the field to get an answer.
- A researcher forms a rational statement of his question. This statement is a rational and unambiguous description of the inquirer's doubts.
- The question as presented to the information system.

The attribution of information need inextricably involves making of valued judgements with respect to the implicit information purpose. The judgement as to whether the information in question, contributes to the achievement of purpose is a straight forward factual judgement.

2.4.1 Factors Affecting Information Need

Information needs are affected by a variety of factors, which are as under:

i.   The range of information services available
ii.   The uses to which information will be put to use.
iii. The background, motivation and professional orientation and other individual characteristics of the user.
iv.   The social, political & economic systems surrounding the user.
v.   The consequences of information use

It can be summed up that to serve better, information needs and users must become the central focus of system operation. It should be clear that the success of information service is more likely to be achieved by adjusting the services to meet the specific needs of an individual rather than trying to adapt the individual user to match the whole sale output of an information system.

A need can be sequenced into substance versus channel dimension. There is lack of operationally meaningful hypothesis. As a scientific discipline the study of information needs and users is still in its infancy. Finding a conceptual framework for research has been a continuing theme.

Summary for Study Session 2

At the end of this study session, you have learnt that:

1. Information usability is defined as the extent to which information product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

2. The information user is a person who is actively seeking access to knowledge/information and who when successful, obtains and uses the knowledge/information.

3. The following are the attributes of information user:

   - Information user must be faced with the need to make a decision
   - He must possess information utilization capacity
   - He must be able to access information
   - He must be selective
   - He must be analytical and evaluative
   - He must be dynamic

Self-Assessment Questions for Study Session 2

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 2.1 (Testing Learning outcomes 2.1)

Define and explain information usability?

SAQ 2.2 (Testing Learning outcomes 2.2)

Explain an information user?

SAQ 2.3 (Testing Learning outcomes 2.3)

Enumerate the factors affecting the information needs of a user?

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Study Session 3: Reference Sources

Introduction

Reference services as defined in the last study session as an information service, which involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff. For reference services to take place there must be sources from which information is extracted.

The objective of this study session is to examine the categories of sources of information; reference sources and their characteristics.

Learning Outcomes for Study Session 4

At the end of this study session, you should be able to;

4.1   Define reference transaction?

4.2   List the sources of reference materials

4.3   Explain the characteristics of reference materials

4.4   List the types of reference resources.

4.1   Reference Department

One of the important functions of a library is the use of its resources such as reference and information sources to- provide information to users on request. The request could range from the specific to general information. For example, a user might request specific information such as: "who is the Secretary General of the United Nations."

It might be in providing background information to "the independence struggle in Africa." Whatever form of information desired by a user, can be made available if the library has adequate reference and information sources in its collection

Reference sources are documents that contain miscellaneous information on any topic - be it an event or individual. These reference and information sources are not meant to be read from cover to cover.

Rather, they are expected to be consulted as and when necessary in order to supply information desired by a user of the library. Because of the importance of reference sources, they are usually separated from the regular non-fiction books in the library.

The reference department is the part of the library where reference transactions take place. **A reference transaction** is an information contact that involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more

information sources by a member of the library staff. The service includes information and referral service. Information sources include:

- printed and non-printed material;
- machine-readable databases (including computer-assisted instruction);
- the library's own catalogues and other holdings records;
- other libraries and institutions through communication or referral; and
- Persons both inside and outside the library.

When a staff member uses information gained from previous use of information sources to answer a question, the transaction is referred to as a reference transaction even if the source is not consulted again. If a contact includes both reference and directional services, it should be reported as one reference transaction.

The reference department provides basic and in-depth information sources in all academic disciplines comprising the curriculum in the overarching institution. The department also provides selective coverage of subject of current or general interest not directly within these disciplines.

In-Text Question

A reference transaction is an information contact that involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff. TRUE or FALSE

In-Text Answer

TRUE

4.2   Sources of Information

Reference sources can appear both in printed and electronic forms. They are specially Compiled to provide answers to any type of queries that might be raised by the user of a library. It only contains facts and rarely does a reference source contain opinions.

It is generally based on universally accepted knowledge. Sources of reference information can be categorised mainly into three. These are primary sources, secondary sources and tertiary sources.

Primary Sources

Technically, primary sources cannot be categorised as reference sources because primary sources are supposed to be original sources which have not been interpreted or

condensed by other workers/ compilers. These sources include journal articles, technical reports, dissertations and theses. Nevertheless, these sources are generally used to meet the special reference search and research queries of users.

Secondary Sources

These are sources that interpret or condense primary sources. They modify, interpret, condense, and rearrange primary sources in order to satisfy the information needs of users. Since they can supply answers to some of the reference queries usually raised by users, they could be considered as reference sources. They include indexes, abstracts, bibliographies, etc.

Tertiary Sources

Tertiary sources are information sources which have been produced after the distillation and filtration of primary and secondary sources. Most of the reference sources used in the library falls under this category. They include dictionaries, encyclopaedias, biographies, yearbooks, handbooks, fact books, almanacs, etc.

Secondary and tertiary sources constitute the reference sources that are used mainly in the library by reference librarians to supply information that would meet the reference queries of users. Another way of categorising reference sources depends on the type of reference queries the sources are supposed to serve.

These are general reference sources and literature search tools. While general reference sources will answer most of the ready reference and specific search questions, literature search tools are devoted mainly to research questions.
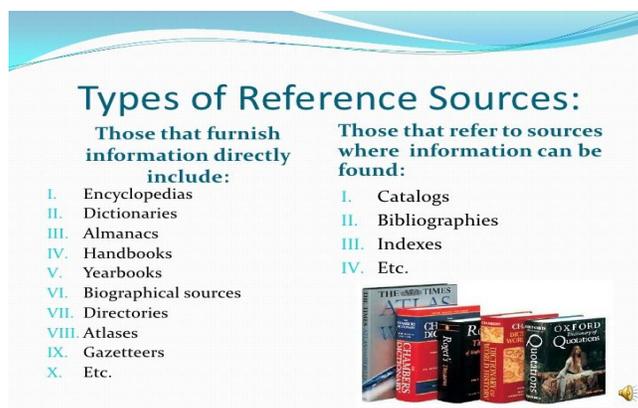
Figure 4.1 *Types of Reference Sources*
Source: *http://tarletonlibrary.blogspot.com.ng/2015/01/top-five-reference-queries.html*

4.3 Characteristics of Reference Materials

A reference material is information in any medium designed by its arrangement and treatment to be consulted for definite items of information rather than to be read consecutively. Common to the various definitions given by authors are the following characteristics:

1.   Designed to be consulted or referred to for some definite piece of information rather than being read through; They are not meant to be read from cover to cover like study books. Users only look up specific items of information in them.

2.   Reference Books are housed in a separate section of the library.

3.   Usually, libraries do not buy multiple copies of reference books as they would other types of books.

4.   They are revised on a regular basis to keep them current.

5.   They are more expensive than other types of books in the library.

6.   Reference books are multi-disciplinary in nature. This is because they contain information from several Sources and on diverse subjects.

7.   Reference books are usually provided with detailed indexes and cross references.

8.   They are organized to facilitate accurate, quick and easy usage in searching information.

9.   Concentrates on facts, often of a miscellaneous nature.

10. Comprehensive in scope, but condensed in treatment.

11. Follows an alphabetical, tabular, classified, geographical, chronological, or topical arrangement or some special plan to facilitate the ready and accurate finding of information.

12. Consistently useful for answering reference questions.

13. Updated regularly as such they contain current information.

Summary for Study Session 4

At the end of this study session, you have learnt that:

1. The reference department is the part of the library where reference transactions take place. A reference transaction is an information contact that involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff.

2. Reference sources can appear both in printed and electronic forms. They are specially

   Compiled to provide answers to any type of queries that might be raised by the user of a library. It only contains facts and rarely does a reference source contain opinions.

3. The service includes information and referral service. Information sources include:

   - printed and non-printed material;
   - machine-readable databases (including computer-assisted instruction);
   - the library's own catalogues and other holdings records;
   - other libraries and institutions through communication or referral; and
   - persons both inside and outside the library.

4. Reference sources are documents that contain miscellaneous information on any topic - be it an event or individual. These reference and information sources are not meant to be read from cover to cover. Rather, they are expected to be consulted as and when necessary in order to supply information desired by a user of the library.

Self-Assessment Questions for Study Session 4

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 4.1 (Testing Learning outcomes 4.1)

What is a reference transaction?

SAQ 4.2 (Testing Learning outcomes 4.2)

List the sources of information

SAQ 4.3 (Testing Learning outcomes 4.3)

Explain the characteristics of reference materials

SAQ 4.4 (Testing Learning outcomes 4.4)

List the types of reference resources.

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Study Session 4: Reference Services
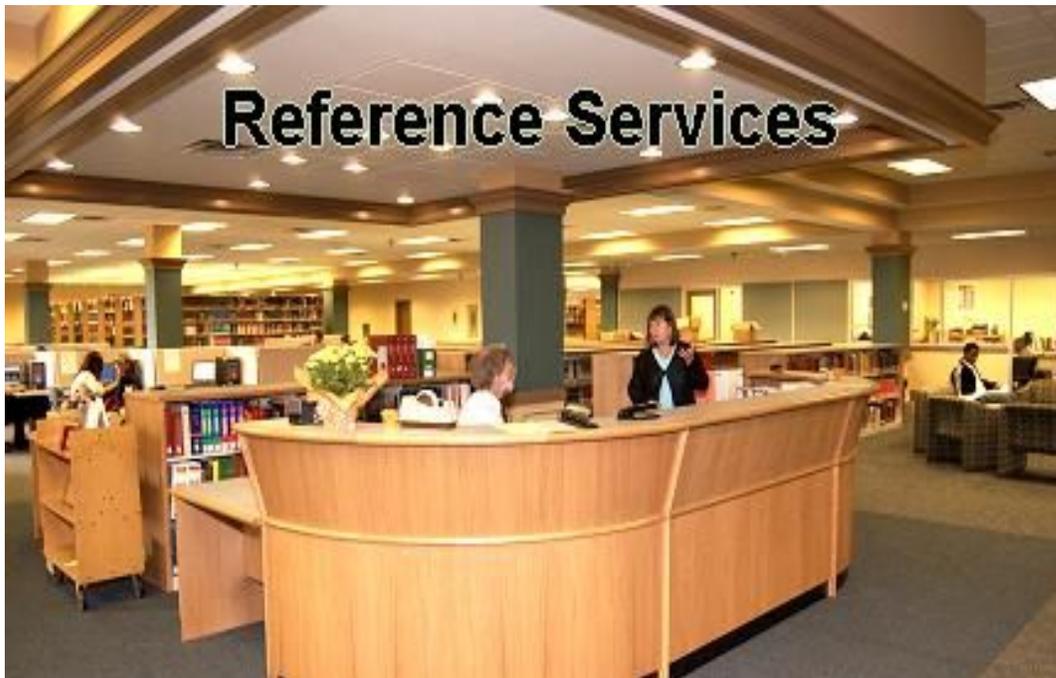
Introduction

In this study session you shall examine the concept of reference and information services; types of reference service and the goals of reference services in libraries. This will in turn enable you to determine the types of resources that are needed for rendering effective reference and information services.

Learning Outcomes for Study Session 3

At the end of this study session, you should be able to;

3.1   Explain reference and information service?

3.2   List and explain the main types of reference assistance?

3.1   The Library

The Library is the primary academic information resource centre. It promotes learning, supports teaching, and enhances scholarly research and creative activities by building collections and providing expert services and innovative access to information. The library is divided into sections and one of such sections is the

reference section, librarians in this section are called reference librarians and they perform reference services.

Reference service in the library is one of the most vital and visible expressions of the library's purpose and mission and is key to the Library's service roles: to serve as a centre for information, formal education, research and independent learning.

In addition, since more users are accessing the library from home or office, which the Library has encouraged, it is imperative that reference services address this new trend. The Library's building shall not be a boundary to its information services. By emphasizing real-time reference service, the library's goal is to offer services to information seekers wherever they are.

In-Text Question

Reference service in the library is one of the most vital and visible expressions of the library's purpose and mission and is key to the Library's service roles: to serve as a centre for information, formal education, research and independent learning.
TRUE or FALSE

In-Text Answer
TRUE

3.2   The Concept of reference services

According to Ranganathan, right contact means, "contact between the right reader and the right book at the right time and in the right personal way". He is of the view that the establishment of such a contact is "the only available and effective method" of discharging the function of converting the users into habitual users.

He has named this method a reference service. Thus, he adds that "reference service is the establishing of contact between reader and book by personal service". Here emphasis is laid on personal service to each user to help him to find documents, which would meet his requirements.

Figure 3.1 *Reference Services*

Source: *http://www.lib.umd.edu/groupvisits/library-services*

According to **Hutchins**, "reference work includes the direct, personal aid within a library to persons in search of information for whatever purpose, and also various library activities especially aimed at making information as easily available as possible" the author rightly emphasises the spirit of humanisation.

But it would be better to use the term reference service instead of reference work. The first one draws attention to service aspect. The present day literature also prefers the term reference service.

It is rather difficult to find a definition of reference service, which would be generally acceptable. Different persons have defined it differently. Broadly speaking, reference service is what a reference librarian does.

3.2.1 What is a reference service?

The function of libraries is three-fold. Libraries acquire information, organize that information in a way it can be retrieved, and disseminate the information the library has acquired. Reference services fulfil this last function. Reference services may vary from library to library, but most libraries have an information or Reference Desk where assistance from a librarian is available.

Almost all libraries also provide reference services via the telephone and in many libraries you can email your reference question, or Ask a Librarian, to a reference librarian who will e-mail you back with the answers.

A reference service is an information service, which involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff.

It includes information and referral services. Information sources include printed and non-printed materials, machine-readable databases, catalogues and other holdings records, and, through communication or referral, other libraries and institutions and people inside and outside the library.

The request may come in person or by phone, fax, mail, or electronic mail from an adult, a young adult, or a child. Reference or information services consist of personal assistance provided to users in pursuit of information.

The character and extent of such services will vary with the kind of library or information centre; with the user the institution is designed to serve; with the skill, competence, and professional training of the librarian/information specialist providing the service; and with the resources available both inside and outside the institutional framework to which the user has come.

This service may range from answering an apparently simple query to supplying information based on a bibliographical search combining the library/information specialist's competence in information handling techniques with competence in the subject of inquiry.

Other definitions of reference service include:
- ✓ Personal assistance provided to the library users in finding information.
- ✓ Assistance provided by the archives staff in helping researchers use the holding of the University Archives.
- ✓ The act of assisting a library user to become a self-directed, independent learner.
- ✓ Providing answers to users' questions in person or by telephone

This feature of information service, irrespective of its level or its intensity, is to provide an end-product in terms of information sought by the user. Reference service includes the provision of formal and informal instruction.

There are three main types of reference assistance:
- ➢ Assistance or instruction in the use of the library, including location of materials, use of the catalogue, use of computers to access information, and the use of basic reference sources.
- ➢ Assistance in identifying library materials needed to answer a question.
- ➢ Providing brief, factual answers to questions, such as addresses, statistics, phone numbers, etc. that can be quickly located.

The general objective of reference service is to meet the information/research needs of library users (faculty, students, staff and other patrons) accurately, efficiently, and pleasantly. An additional goal is to provide instruction so that patrons may become more independent in their use of library resources.

Reference Service Procedure

A linear conceptual framework of reference service has been provided below to help us in creating insight into the process of reference service. We should appreciate the fact that the element of feedback is embedded in the interaction process between the reference librarian and the information user.

Linear Conceptual Framework of Reference Procedure

The linear conceptual framework shows that the reference service user apply the procedure in seeking information:

Identifies conscious need for information

Take decision to consult the library or information centre

Expresses identified information needs

Information seeking mode begins – alternative considered

3.3   Specific Objectives of Reference Services

1. It is the policy of the Library to consider each individual information query to be of equal merit regardless of the age, gender, ethnicity, disability, sexual preference or English language proficiency of the library patron.

The Library's intention is to accord equal attention and effort to each inquiry, although the time spent by staff on a question may vary in response to the perceived needs of the patron, the information resources (both staff and collections) available and the method of receipt of the inquiry. There are some limits to service for non-university patrons (see appropriate section below).

2. To maintain an up-to-date, relevant and readily accessible working collection of reference materials, (electronic and paper) relating primarily to the University's programs. The reference collection includes general and research-oriented dictionaries, encyclopedias, biographies, bibliographies, indexes, directories, almanacs, handbooks, and statistical sources.

3. To give appropriate reference assistance to the Library's clientele in real-time (i.e., when it is needed, regardless of where the patron is). In helping patrons, the reference staff determines the need of the patron, the exact information requested and try to find sources appropriate to the level of knowledge and interest of the patron.

   This service is provided regardless of whether the patron has come to the library, telephoned, e-mailed or engaged in an online chat session.

4. To provide instruction in Library use by the most effective means and with suitable cooperation with other Library units.

5. To provide access to remote bibliographic, numeric and full-text databases.

6. To actively publicize the scope, nature, and availability of the information services we offer. We shall employ those media most effective in reaching our entire clientele or selected segments of that clientele.

7. To facilitate access to library materials which are not available in the Library

8. To create an environment for and a tradition of good service within the Department and to promote the effective utilization of the staff and materials at our disposal.

9. To cooperate with other Library units by providing them with information about user needs derived from ongoing contact with our users.

Providing reference services in a library or information centre is accepted as a critical responsibility in meeting the information needs of users and prospective users. Reference services are organised to provide, appropriate, well-coordinated access to the information resources existing within an area or a given field of endeavour.

Since the primary functions of a library or information centre is encapsulated in ultimate terms, as facilitating the transfer of information, the distinguishing feature of reference services is that it specifically ensures the optimum uses of information resources through substantive interaction with the users on direct and indirect bases. The librarian/information specialist is the intermediary or the negotiator for unlocking these multifarious information resources.

Figure 3.2 *Reference services in a library*
Source:http://tarletonlibrary.blogspot.com.ng/2015/01/top-five-reference-queries.html

3.4 Types of Reference services

One cogent reference service provided to library user is answering of users' queries or questions. There are mainly four categories of reference queries usually demanded by users of a library.

- Directional Reference Queries: This type of query normally does not require the reference staff to make use of reference sources since the queries raised are generally questions that involve locating a particular section of a library. For example, a user may ask the reference librarian to direct him/her to the photocopying section or shelves where science books are kept. Occasionally, a user may request to see a specific staff which may necessitate the reference librarian to look in the library directory and point out where the officer could be located.

- Ready Reference Queries: These are the commonest queries usually raised in the library. This type of query relies heavily on the use of reference sources.

  For example, a question like "Which town is the largest in Africa?" "Which country has the largest population in Africa?" "Who is the President of

Mauritius?" "Is pharmacy programme offered at the University of Botswana?" Ready reference sources, such as yearbooks, directories, handbooks, etc, become very useful for answering these questions.

- Specific Reference Search. There are some queries raised by users which usually involve the use of a number of reference sources. Such queries include "the role of women in the development of librarianship in Africa." In this type of query, multiple reference sources are usually consulted in answering such questions. Thus, directories, encyclopaedias, handbooks, abstracts and indexes, bibliographies, etc, would be utilised.

- Research Queries. Some users of a library might request information on serious issues that involve rigorous academic activity. This has to do with researchers who are investigating certain issues. Thus, a user who is working on "the impact of library use on the academic performance of high school students" will need to consult a lot of literature on the topic. Such a research will involve the use of research tools such as indexes, abstracts, hand books, bibliographies, etc.

  Other reference services include:
  - Compilation of reading list
  - User education
  - Library display or display of new arrivals in the library
  - Compilation of bibliography
  - Referral services
  - Selective dissemination of information (SDI)
  - Library publicity and awareness

A reference librarian must be familiar with the different types of reference and information sources available in the library. He/she should be versatile in using these reference sources to answer queries because these queries are diverse; one reference source may not be able to answer all types of reference queries; hence a reference librarian must know the different types of reference and information sources, the types of questions they can answer, the arrangement of the reference and information sources, as well as how to evaluate each reference source in terms of its authoritativeness.

Summary for Study Session 3

At the end of this study session, you have learnt that:

1. A reference service is an information service, which involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff. It includes information and referral services.

2. There are three main types of reference assistance:

   - Assistance or instruction in the use of the library, including location of materials, use of the catalogue, use of computers to access information, and the use of basic reference sources.

   - Assistance in identifying library materials needed to answer a question.

   - Providing brief, factual answers to questions, such as addresses, statistics, phone numbers,

Self-Assessment Questions for Study Session 3

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 3.1 (Testing Learning outcomes 3.1)

Explain reference and information service?

SAQ 3.2 (Testing Learning outcomes 3.2)

List and explain the main types of reference assistance?

Post – Test

1. What are the goals of reference and information services in libraries?
2. What is a query?
3. Discuss types of queries?

References

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Fayose, P.O.E. (1973). *School library resource centres*. Op.cit

Study Session 5: General Reference Materials

Introduction

In this study session, you will learn about the categories of reference material or books found in libraries with special focus on general reference books.

Learning Outcomes for Study Session 5

At the end of this study session, you should be able to;

5.1   Define a reference book?

5.2   Distinguish between general reference book and subject reference book

5.1   What is a Reference Material?

Reference materials are housed in the reference sections of the library. The reference department is very important in any library. It is there that the staff answers reference questions such as who is the head of state in India. When did the first coup d'état take place in Nigeria? Where can I find a book on butterflies?

The books in the reference section/department are on 'closed access' this means that they cannot be borrowed or taken out of the library. Most other resources in a library can be borrowed but reference books cannot. General reference books are broad in scope. That is, they are not limited to particular subjects.

A reference material is any material that is designed and arranged to be consulted for specific Item of information.
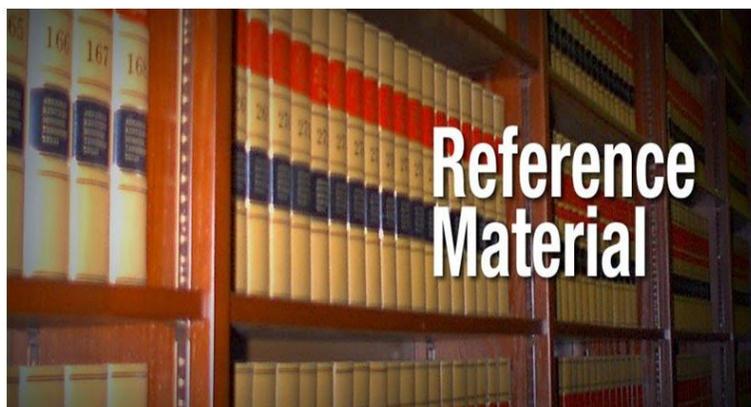

Figure 5.1: *Reference Material*
Source:*whttp://scesalini.blogspot.com.ng/*

Most reference materials have been planned and written for consultation purposes only and not to be read from cover to cover. The alphabetical arrangement of the materials facilitates quick retrieval of information.

Reference materials are compendium of information in all branches of knowledge. The information contained in reference books have been collected from several other sources and written by specialists in their respective fields.

This makes the information authentic and usually up to date. However, there are subject reference books which aid the understanding of specific subject discipline as well as general reference books, as explained below:

a. Subject Reference Books

Subject reference books are subject-based reference materials dealing with a specific subject discipline. Examples include Encyclopaedia of physics, Dictionary of Botany, etc. The items treated are generally arranged in alphabetical order but sometime in chronological order. The reference collection enables the reference librarian to answer all types of reference questions and provide bibliographic services to readers.

b. General Reference Book

Reference materials are used frequently for general information regarding a process or a definition of a term, or background information on a subject. Types of reference materials include encyclopaedias, dictionaries, indexes, almanacs, handbooks, statistical directories, biographical handbooks and other related materials.

These types of materials may not be checked out of the library. Examples include Encyclopaedia Britannica or encyclopaedia Americana

Reference sources of information can also be grouped into four large categories:

1. General – these include: encyclopaedias, dictionaries, fact sources Biographical sources and geographical sources
2. Literature search tools – these include: bibliographies, library catalogues and indexes and abstracts
3. Government publication and
4. Miscellaneous

5.2   General Reference Sources

General reference sources can be categorised mainly into five.   These are:
   a. Encyclopaedias

b. Dictionaries

c. Fact Sources

d. Biographical Sources

e. Geographical Sources

Reference resources include Abstracts and Indexes, Handbooks, Atlases, Gazetteers, Yearbooks, Biographical Dictionaries, to mention the most common. The kind of information which a user is looking for will determine the kind of reference books to be used. The reference librarian will .always be around to guide the users.

5.2.1 Encyclopaedias

They are reference sources that are devoted mainly to providing information and facts on a variety of topics. They provide background information on any topic, as well as current information. The articles are usually written by experts in the field and the topics are arranged alphabetically. At the end of each article, a list of references pertaining to the topic is provided.

An encyclopaedia could be general, e.g. *Encyclopaedia Britannica,* or a subject encyclopaedia, e.g. *Encyclopaedia of the Social Sciences.* In the former, the encyclopaedia covers all kinds of topics, while in the latter, it is restricted to topics on a specific subject. They treat information from the specialist point of view. Because encyclopaedias take a long time to prepare, they have supplements which bring them up to date annually or biannually.

5.2.2 Dictionaries

A dictionary is a special type of reference work that deals with all aspects of words, such as meaning, spelling, pronunciation, etymology, synonyms, syllabication and grammatical information. Dictionaries are generally arranged in alphabetical order letter by letter. There are general, specialised and foreign language dictionaries.

In-text Question

One of the following is not a general reference sources?

a. Encyclopaedias

b. Chemical sources

c. Biographical Sources

d. Geographical Sources

In-text Answer

b. Chemical Sources

The general dictionaries cover all aspects of words in all fields of knowledge, while the specialised dictionaries deal with certain aspects of words such as slangs, synonyms, antonyms, abbreviations and acronyms. Examples of dictionaries are Advanced Learners 'Dictionary, Webster New College Dictionary and Funk & Wagnall's New Standard Dictionary of the English language.

Besides language dictionary, there are specific subject dictionaries. These treat words from the specialist point of view. Subject dictionary include Dictionary of Legal Terms, Dictionary of Science, Dictionary of Modem Business, Dictionary of Geographical terms and A dictionary of Physics. Also, some dictionaries are categorised as foreign-language dictionaries.

These are dictionaries in which the words in one language are translated into another language, that is, the equivalence of words is provided. Such dictionaries are called bilingual dictionaries. There are also polyglot dictionaries in which words in one language are translated into two or more languages. There could be five foreign languages equivalent of an English word.

5.2.3 Fact Sources

These reference sources are the most heavily used for providing reference services. They provide facts on a wide range of issues - both background and current information. They consist of reference sources such as yearbooks, almanacs, handbooks, directories, etc.

The facts stated in these reference sources are usually accurate as at the time of production. They are very useful in providing answers to ready-reference questions. Fact sources include:

- **Almanac** - Almanacs are the most popular among the fact sources. They provide basic data and statistics on any topic \such as countries, personalities, subjects, etc. They are published annually and they usually contain retrospective materials. Examples are:

  World Almanac and Book of Facts. New York: Newspaper Enterprise Association, 1868

  Whitakers Almanac. London: Whitaker's Almanack, 1869 –

- **Yearbook**- Year-books are published annually. They provide a variety of information and review of events of the past year. The data and statistics contained in them are usually up to date and reliable.

Some Year-books are general in nature and many deals with a specific country, examples are the Nigerian Year-book pub1ishcd by Daily Times, or provide information on world events Statesman's Year-books.

Some Year-books deal with specific subjects for example, International Labour Office Year-book & Labour Statistics published in Geneva by the International Labour Organisation (ILO), Wither's Almanac.

This provides yearly statistics on a great variety of subjects and countries especially the Commonwealth Institutions. Some organizations also produce Year-books in which their activities are reviewed for example Commonwealth Universities Year-book.

This publication contains information on Universities in the entire commonwealth Countries such as the year founded, principal officers, names of academic staff, and courses available and entrance requirements.

It has an appendix which provides brief information with statistics on the various commonwealth countries. Yearbooks are also similar to almanacs, but they are restricted mainly to the events of a particular year. Other examples are:

Europa   World Yearbook (formerly Europa Yearbook). London: Europa, 1959-
Statesman's Yearbook. New York: St Martins Press, 1864 –

- **Handbook**- A handbook is usually a small book, conveniently handy and containing concise information on a given institution or organization or country. For example, Nigerian Handbook produced by the Department of Information in the Presidency.

  Guinness Book of Records which provides information on the extremes in human performance and of the natural world, human achievements, sports, humours, political and social life, military arts and so on. Handbooks are very useful to reference librarians.

  They are usually a collection of miscellaneous facts on a particular theme or subject. They generally assume knowledge; hence they are usually used to provide answers to specialists' queries. By their nature handbooks are usually limited in scope. The most common handbook is:

  Guinness World Records (formerly Guinness Book of Records). New York: Banmtam, 1956.

- **Manuals -** These are like Handbooks. They provide guidance and information on given subjects or topic. Turbian (1973) has produced A Manual for Writers of

term papers, theses and dissertations (4th ed. 1973), which gives information on how to plan, collect materials and actually execute a project or conduct research.

- **Compendium - A** compendium can also be categorised as a fact source as it provides a brief summary of important information in a subject field.

5.2.4 Biographical Sources

These are special reference sources that provide information on individuals whether dead or living. They give written accounts of people's lives which contain a collection of sketches of varying lengths about individual lives. The names of persons are arranged in alphabetical order. Sometimes it may be names of famous men and women, politicians or professionals.

There are three major categories of biographical sources. These are universal and current biographies, national and local, and professional and subject biographies. The universal and current biographies are usually unrestricted in terms of coverage.

The entries cover all parts of the world. They include biographical dictionaries and "Who is Who." Some of the entries cover only living persons; while some are restricted to only dead persons. Examples of universal biographies are:

International Who's Who. London: Europa Publications, 1935- .

Webster's New Biographical Dictionary. Springfield, MA: G &C Merriam Company. 1985-

There are some biographies that are limited to regions or continents, e.g. Africa Who's Who. London: Africa Books Ltd, 1996.

It provides up to date biographical information on important personalities in Africa. It covers about 1400 living Africans from all walks of life. The entries are arranged in alphabetical order. An example of those limited by countries include:

News watch Who 's Who in Nigeria, 2nd edition. Lagos: Newswatch Books Ltd, 2001.

It covers important personalities from all walks of life in Nigeria. There are about 4000 entries.

There are some biographies that is limited to dead personalities. Examples are:

Dictionary of American Biography. New York: Charles Scribner's & Sons, 1928-

Dictionary of National Biography. London: Smith, Elder, 1908 .

The former covers famous personalities but who are dead in the USA. The entries cover those who had made substantial contributions to America, while the latter is the British counterpart.

There is also another type of biography referred to as current biography published in the USA. It provides biographical information on those currently making news, especially those who have influenced the American scene. A good example is:

Current Biography. New York: The H. W. Wilson Company, 1940-

It is published by H. W. Wilson, USA. It is a monthly publication and cumulated annually.

Professional and subject biographies are restricted to those that are involved in a particular profession or subject area. A good example is:

Who 's Who in Library and Information Science Training Institutions in Africa, 2nd edition. Ibadan: Archlib, 1995.

Whether it is a universal biography or professional biography, certain criteria are usually put forward by the compilers. These include scope restriction and the cross-checking of entries put forward by the individuals to ensure that the information contained in the entries is correct.

5.2.5 Geographical Sources

These are reference sources that provide information on places, such as towns, cities, countries, geographical features, etc. These include atlases, gazetteers and travel guides. Atlases are a collection of maps bound together.

- **Atlases -**An Atlas is a volume of maps plates and charts which provide geographical information about places. Some atlases have articles or brief description of items discussed. Others have tables and others illustrative materials to highlight climate, vegetation, mineral resources, industrial products and soon.

  The most comprehensive Atlas known is the Times Atlas of the world, Gazetteers.'

  Another is the Atlas of African History. Atlases provide information on physical and climatic conditions of different places such as towns, countries and regions, e.g. *The Times Atlas of the World: Comprehensive Edition,London: Times Books, 1999, 220 p.*

- **Gazetteers -** A gazetteer is a geographical dictionary which provides information and data about places which may include villages, town or rivers, mountains, lakes and other geographical features as well as population longitude

and latitude. The Gazetteer of the Northern Provinces Nigeria with a general introduction. by A.H.M. Kirk Green (1974) is a good example.

Gazetteers usually provide information on towns, cities and other geographical features. These are more or less a dictionary of geographical places such as cities, towns, countries, etc. Examples include: *The Columbia Gazetteer of the World. New York: Columbia University Press, 1998. Webster's New Geographical Dictionary. Springfield, MA: G &C Merriam Company, 1972.*

- **Guides -** Guides provide direction or help on a given subject or topic of a specific nature. Some guides provide information on cities or countries. Examples are A to Z London and A guide to Ilesha. Others provide information on subjects in bibliographic manner - Woodbury, M.A. A guide to source, of Educational Research, and Lagos State Yellow Pages.

  Travel guides provide information to a traveller about places of interest and features of a particular place the traveller wishes to visit. Thus, information on transportation, hotels, restaurants, etc, is usually provided.

- **Directories -** A directory gives a list of names and addresses of persons, institutions, organizations, business enterprises and so on in a town, district, country or even the world. The best example of a directory is the National Telephone Directory. Others are: The world Directory of Multinational Enterprises, Directory of Catering and Hotels and Catering Establishments in Nigeria. Directories are usually arranged in alphabetical order.

  They contain information such as addresses, brief information on individuals or institutions. There could be city directories, telephone directories or directories in major areas of specialisation. A good example is the: *World of Learning. London: Europa Publications, 1949-*

  There are many yearbooks and directories that are devoted to African countries but most of these directories are limited by nationality. However, there are a few yearbooks and directories that cover the whole of Africa. An example is: *Africa South of the Sahara. London: Europa Publications, 19'.-*

  This is an annual yearbook on Africa. It is divided into three parts The first part provides background information to the continent. The second part deals with information on regional organisations in Africa, while the last part provides detailed information and statistical information on every country in Africa. The countries are arranged in an alphabetical order.

Summary for Study Session 5

At the end of this study session, you have learnt that:

1. The general reference source are categorised mainly into five. These are:
   a. Encyclopaedias
   b. Dictionaries
   c. Fact Sources
   d. Biographical Sources
   e. Geographical Sources

2. Reference materials are housed in the reference sections of the libraries. The Reference Department is very important in any library.

3. Reference sources of information can also be grouped into four large categories:

   - General – these include: encyclopaedias, dictionaries, fact sources Biographical sources and geographical sources
   - Literature search tools – these include: bibliographies, library catalogues and indexes and abstracts
   - Government publication and
   - Miscellaneous

Self-Assessment Questions for Study Session 5

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 5.1 (Testing Learning outcomes 5.1)

Define a reference book?

SAQ 5.2 (Testing Learning outcomes 5.2)

Distinguish between general reference book and subject reference book

Post- Test

1. Justify the inclusion of fact sources in a library collection.
2. What are geographical sources of information?

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Study Session 6: Literature Search Tools, Government Publication and Miscellaneous Reference Materials
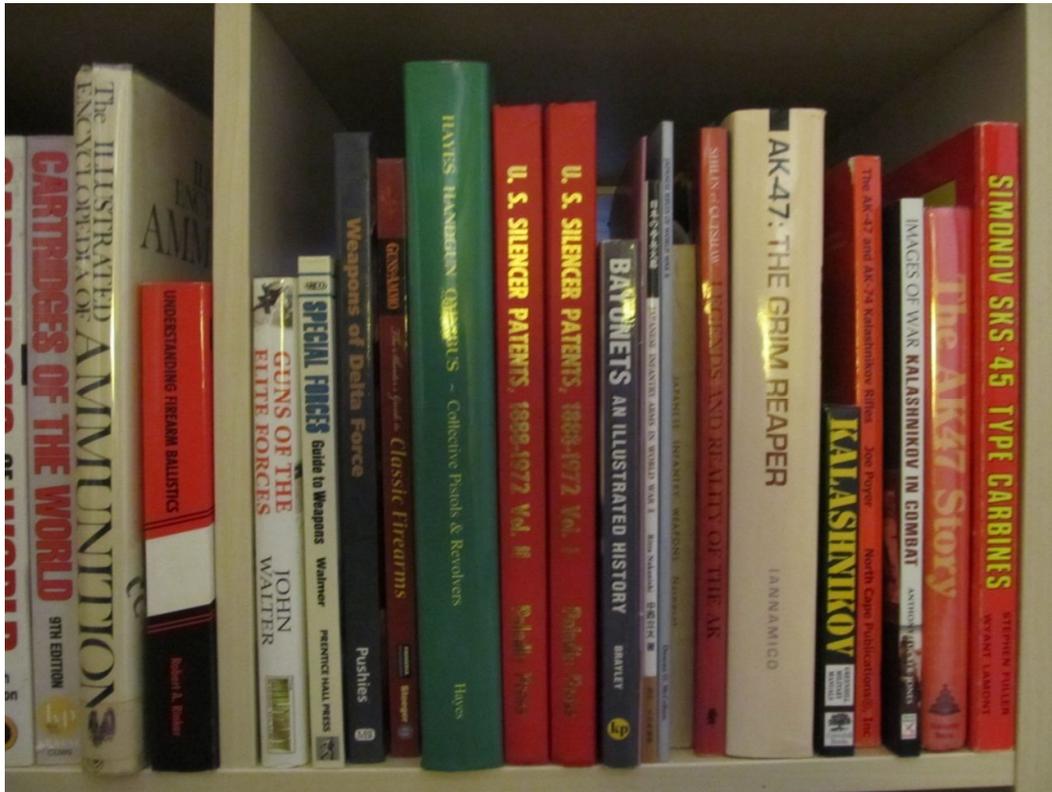
Introduction

In the last study session, you discussed the categories of reference or books found in libraries with special focus on general reference books. In this study session, we are going to examine other useful reference materials including literature search tools, government publication and miscellaneous reference materials found in library.

Learning Outcomes for Study Session 6

At the end of this study session, you should be able to;

6.1   Explain Literature search tools.

6.2   Explain the categories of Bibliographies

6.3   Describe the various categories of literature tools and their importance to library users.

6.1　Literature Search Tools

This category of reference sources consists mainly of access tools. They are usually called literature search tools. They are locational and they are very useful for answering research queries. Literature search tools comprise:

    a.   Bibliographies

    b.   Library Catalogues

    c.   Indexes and Abstracts

6.1.1　Bibliographies

A bibliography is a descriptive list of books arranged in an alphabetical order of authors' surnames, other names and titles of works by the author. Bibliographies help librarians and readers alike to trace certain books. There are general as well as subject oriented bibliographies. Examples of bibliographies are, Nigerian Publications published by the

National Library of Nigeria, Fayose, P.O.'s A Guide to Children's Literature for African Teachers, Librarians and Parents. They provide a list of articles, books, technical reports, conference proceedings, theses and dissertations on a particular topic. They may be delimited by subject, geographical scope, historical period or a particular individual. They only provide bibliographic records of each item listed in the bibliography.

The bibliographic record will include author, title of a book or an article, place of publication, publisher's name, date of publication. If it is a journal article, it will provide the name of the journal, volume number, issue number, date of publication, pagination, International Standard Book Number (if it is a monograph/book) or International Standard Serial Number (if it is a journal). Bibliographies can be categorised into the following:

- Universal Bibliography
- National and Trade Bibliography
- Subject Bibliography
- Bibliography of Bibliographies
- Guides to Reference Books.

A bibliography is a descriptive list of books arranged in an alphabetical order of authors' surnames, other names and titles of works by the author. Bibliographies help librarians and readers alike to trace certain books. TRUE or FALSE

In-Text Answer
TRUE

Universal Bibliography

As already stated, a bibliography could be delimited by geographic area, scope, subject, form, period, etc. There are some bibliographies that are universal. They tend to cover all forms of published items regardless of geographical scope, subject, period or form.

They tend to cover all subjects in all languages and in all countries. Of course this type of bibliography is practically impossible but there are still some bibliographies that are not limited by country, time, language, subject or form. Such bibliographies can be termed as universal.

National and Trade Bibliographies

These are bibliographies that are limited to a particular country. They are expected to cover all forms of knowledge published within a country. It may be published annually or over a longer interval They are generally cumulated five-yearly. These bibliographies are normally published by the national library of each country, e.g.

British National Bibliography. London: British Library, 7P5o-*Natioiial Bibliography of Nigeria. Lagos: National Library of Nigeria, 1973-*

British National Bibliography is published weekly and cumulated annually, while *National Bibliography of Nigeria* is published annually (although it could be many years behind schedule). These bibliographies are based on the legal deposit publications produce; in the country within a particular year.

There are some bibliographies that are published within a country with a view to selling books published in that country, e g *Books in Print: New Providence. N. Y.: R.R. Bowker, 1948-Whitaker's Books in Print (* formerly *British Books in Print). London: Whitaker, 1874-*

Such bibliographies are called trade bibliographies. They generally list only books and monographs on sale, hence the prices of items listed are normally provided. They cover

books that had been published in the previous years as long as they are still on sale. Thus, they are not restricted to only publications produced in one year, unlike a national bibliography, which is limited to what was produced in a particular year.

Subject Bibliographies

This is perhaps the commonest type of bibliography. They are very useful to scholars and researchers. This type of bibliography is delimited in scope by subject.

Bibliography of Bibliographies

This is more or less a tertiary reference source. It leads the users to bibliographies published in a particular subject or discipline. It performs the function of a guide to bibliographies. The best known example is: *Theodore Besterman's World Bibliography of Bibliographies.*

It is in five volumes. Another example of bibliography is:

Bibliographic Index. New York: The H. W. Wilson Company, 1940-

Bibliographic index provides a list of current bibliographies. It is issued monthly and cumulated annually. The entries cover bibliographies in different subject areas.

Guides to Reference Sources

Guides to reference sources could be categorised as bibliographies since they only provide a list of reference sources. They can be regarded as bibliographic guides to reference sources. They are usually arranged in a systematic order. They guide users to general and specific information resources in various fields. The sources include:

Walford, Albert John. Guide to Reference Materials, 7th ed. London: Library Association, 1998-1999. It is in three volumes.

Sheehy, Eugene P. Guide to Reference Books, 9th ed. Chicago: American Library Association, 1976.

This guide provides a list of more than 14000 entries. Each entry listed is fully annotated with brief information on the content of the reference.

6.1.2 Library Catalogues

This is the first port of call to users interested in accessing documents of interest, hence they are useful literature search tools. They contain information on all materials held by a library.

They perform the same function of a bibliography except that while the entries in a bibliography are entered only once under the main entry, those of a library catalogue can be by author, title, or subject.

Another difference is that all the documents listed in a library catalogue can be found in that library, whereas all the entries in a bibliography might not be found in one library.

6.1.3 Indexes

These are guides to all documents relevant to a particular subject or discipline. The various aspects of the subject are given and all documents on a particular aspect of that subject are listed together regardless of the form of the items. These could be books, journal articles, conference proceedings, reports, etc.

These various items are" arranged alphabetically. Each item listed contains the full bibliographic information, such as the author, title, publication details, pagination, etc. Indexes to periodicals are particularly important information sources because they are generally up to date than other sources. They are issued weekly, monthly, and then cumulated annually.

The index is, thus, a guide to the contents of documents on a particular subject. Usually, the arrangement is by subject and author. Key subject terms are selected from the published documents which represent the entire content of the document. The key subject term will therefore serve as the access point for a user who is interested in the subject.

The user will be able to locate the documents of interest since each item in an index has its full bibliographic information. There are several types of indexes, especially for the various subjects.

They are usually compiled by experts in the field. There are generally two types of indexes, general and subject indexes. However, subject indexes are those that are generally of importance to scholars and researchers because of the depth of coverage.

6.2 The Readers Guide to Periodical Literature

It covers all types of periodicals regardless of subject coverage. Subject indexes on the other hand cover all forms of published material on a particular subject. Periodicals, books, pamphlets, reports, government documents, etc, are covered. There are also subject indexes, *e.g.*

Library Literature and Information Science. New York: The H. W. ' Wilson, 1921- (formerly Library Literature.)

In addition to these two major types of indexes, there are indexes to a single periodical, indexes to newspapers, indexes to theses and dissertations, indexes to reports, book indexes, etc. Another major type of index is the citation index. This is a special type of index published by the Institute of Scientific Information, Philadelphia, USA. It covers all the major disciplines. Examples are:

Science Citation Index. Philadelphia: Institute of Scientific Information, 1961 -
Social Science Citation Index. Philadelphia: Institute of Scientific Information, 1973-
Arts and Humanities Citation Index. Philadelphia: Institute of Scientific Information, 1977-

The assumption of a citation index is that the list of references that appears at the end of a journal article or document has some relationship with the document. Thus, any user who is interested in the subject of the document might as well consult the list of references.

The author of an article will only cite another author when the subject of that cited document has some useful purposes. Where there is a connection between a citing document (that is the original document, e.g. journal article) and the cited document (that is, each of the references listed in the list of references).

This is the principle of citation index. Thus, in a citation index all listed references (cited documents) are arranged and followed by a sub-list of all authors (citing papers) that have cited each list: reference. All those authors listed are arranged chronological underneath each reference listed. This is repeated for all the references. There are three parts of a citation index:

a. Citation index - this provides a list of authors of each paper in a subject in an alphabetical order. All those authors who have cited the paper are listed beneath the paper in an abbreviated form.

b. The source index - this provides the full bibliographic information of all the papers that have been listed in the citation index.

c. The Permuterm Subject Index - these are words in the title that are used as access points.

Abstracts

The abstracts are similar to indexes. They generally perform the same functions except that in addition to listing the bibliographic record of each item, they also give a summary of each item listed.

The two common examples of abstracts in the field of library *and* information studies are:

Library and Information Science Abstracts. London: Library Association, 1969 -
Information Science and Technology Abstracts. Medford, A. *Information Today Inc. 1966 -* (formerly *Information Science Abstracts).*

Library and Information and Science Abstracts is published monthly and then cumulated annually. *Information Science and Technology Abstracts* is published nine times a year.

Government Publications

Government publications are fundamentally information resources generated by different arms of government, including ministries, parastatals and government. Government publications can also be regarded as reference sources because some of the information required by users can be supplied as government publications.

These are publications issued by branches and organs of government, including judicial and legislative bodies. Also, publications of regional and international organisations are regarded as government publications. The information contained in these publications may never be found in other information sources.

Miscellaneous

There are other compendia in the market which do not fall under the conventional title of reference books. But they carry information of a very varied nature. There are also a host of questions and answer books which are particularly useful in school and children's library

Examples are: A.M. Leokum's Tell Me answers to over 300 questions-children ask most often, or Clifford Parker's 365 things to know. For reference books to serve the purpose for which they are intended, they are revised periodically. We have already seen that some of the reference books have annuals published to make them current.

Summary for Study Session 6

At the end of this study session, you have learnt that:

1. We have examined literature search tools, government publication and other reference books as important class of library resources. Reference books are those materials in a library which are consulted for specific items of information. The two most common reference books are encyclopedias and dictionaries

2. Bibliographies can be categorised into the following:
   - Universal Bibliography
   - National and Trade Bibliography
   - Subject Bibliography
   - Bibliography of Bibliographies

3. Indexes: These are guides to all documents relevant to a particular subject or discipline. The various aspects of the subject are given and all documents on a particular aspect of that subject are listed together regardless of the form of the items. These could be books, journal articles, conference proceedings, reports, etc.

4. The abstracts are similar to indexes. They generally perform the same functions except that in addition to listing the bibliographic record of each item, they also give a summary of each item listed.

Self-Assessment Questions for Study Session 6

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 6.1 (Testing Learning outcomes 6.1)

Explain Literature search tools.

SAQ 6.2 (Testing Learning outcomes 6.2)

Explain the categories of Bibliography

SAQ 6.3(Testing Learning outcomes 6.3)

Describe the various categories of literature tools and their importance to library users.

References

Aina, L.O.(2004) *Library and Information Science Text for Africa.* Ibadan : Third World

Bopp, R. E. and Smith, L.C. (2000). *Reference and information services: An* Clive Bingley, 240p.

Edition. New York: The McGraw-Hill Companies, Inc.436p.

Harrison, C. and beenham, R. (1985).*The basics of librarianship.*2nd Edition. London: Information Services, 368p.

*Introduction.*3rd. Edition. Eaglewood, Co: Libraries Unlimited, 617p.

Katz, W.A. (1997). *Introduction to reference work. Vol. 1 basic information source.* 7th

Study Session 7:
Evaluation of Reference Sources
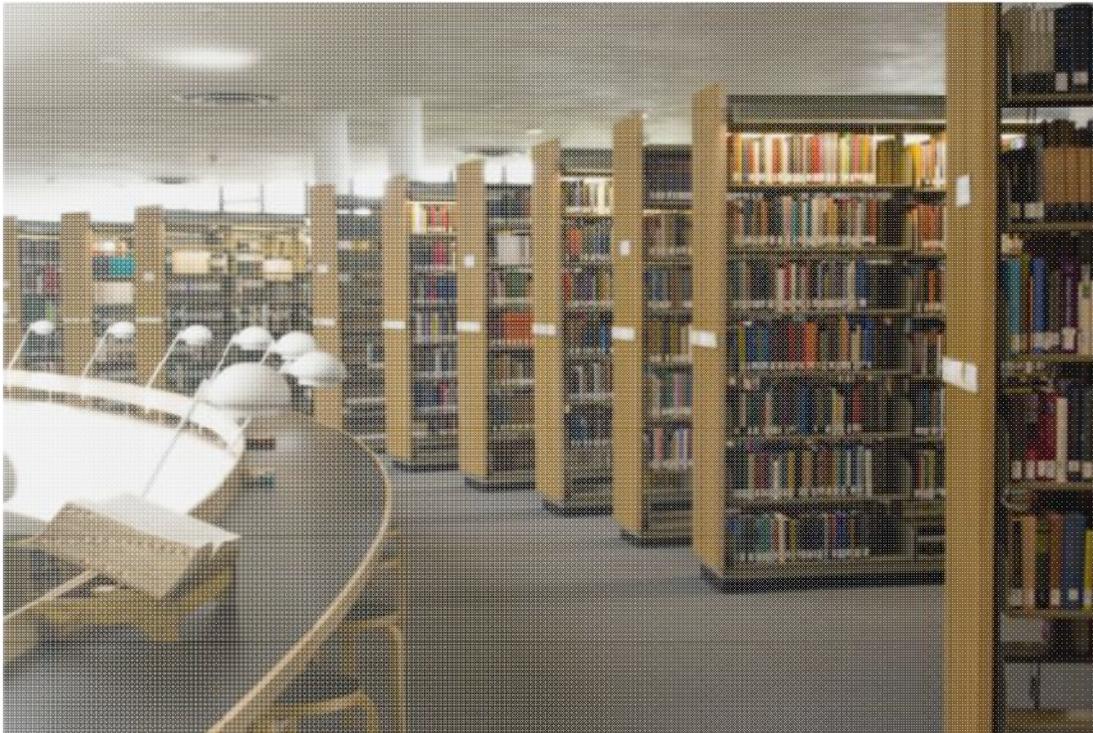
Introduction

The objective of this study session is to consider the criteria for evaluating reference sources. This is important because it helps to guide the reference librarian in selecting reference materials for use in the library.

Learning Outcomes for Study Session 7

At the end of this study session, you should be able to;

7.1   Define the term evaluation?

7.2   Know the criteria for evaluating reference materials

7.3   Explain Evaluation of Internet information

7.1   Evaluation

Evaluation is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards.

It can assist an organization, program, project or any other intervention or initiative to assess any aim, realisable concept/proposal, or any alternative, to help in decision-

making, or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed.

The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change.

In-text Question

_____is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards.

    a. Reference sources
    b. Evaluation
    c. Bibliographies
    d. Reference books

In-text Answer

b. Evaluation

7.1.1   Evaluation of Reference Sources

There are many types of reference sources that are published regularly and the library can only select a limited portion from an array of large number of reference sources available. The reference librarian must be guided by certain indicators in the selection and acquisition of reference sources. In selecting reference books, the reference librarian would be greatly assisted if he/she consults reviews of reference sources.
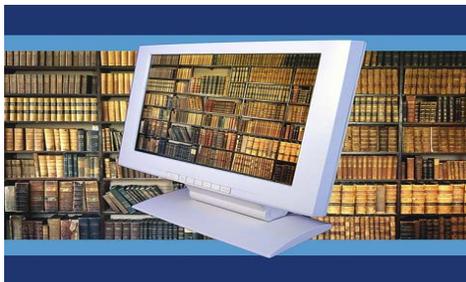
Figure 7.1: Reference Sources
**Source**:http://calstatela.libguides.com/ReferenceSourcesOnline

The reference librarian can study a reference source to be bought by examining a copy with a view to using it to answer some reference queries. This would enable the reference librarian to reflect on the content by flipping through the introduction, preface, table of contents, chapter headings and sub-headings, as well as the index.

The index is an important evaluation criterion. This would enable the reference librarian to have an idea or opinions about the reference tool and how useful it would be if it is added to the reference collection.

Unlike non-fiction and fiction books, reference sources are very expensive as such they must be evaluated before a library acquires them. Some of the criteria listed by Katz (1997) include the authority of the compiler/publisher, the purpose of the reference source, scope, audience, cost and format.

- **Authority of the Compiler/ Publisher**

Authority: the authoritativeness of a reference book is judged on the basis of qualification, experience and reputation of the sponsoring body (if any), publisher, distributor, author(s), editor(s), and compilers.

- Authorship: what are the qualifications, experience and education of the author, authors, contributors, and editors by reputation and as revealed in previous works?

- Auspices: what is the reputation of the publisher or the sponsoring agency?

- Genealogy: is the work new? If it is based on previous publication, what is the extent of the revision?

The authority of the compiler and the publisher is important. One must ensure that the compilers/publisher have the required expertise in the field of coverage. Similarly, notable publishers will convey some authority on a reference source since they will only invest in a worthy business. The authority of the encyclopaedia is essential.

This can be gauged based on the compilers and the publishers of the encyclopaedia. Also, the revision policy of the encyclopaedia is an indicator of the authority of the encyclopaedia. Thus, one must ensure that the contributors to the encyclopaedia are experts who are in a position to provide up to date, accurate and unbiased information.

- Writing Style - This is very essential in evaluating an encyclopaedia. It should be comprehensible to readers with limited education.

Treatment: this refers to the thoroughness, reliability and completeness of the information. For example, the facts, statistics, place names, names of person, names of organisations, background details etc. It also includes the category of users for which the book has been written either for scholars or laymen, adult or children.

- Accuracy: how thorough, reliable and complete are the facts?

- Objectivity: is there any bias and controversial issues? How balanced is the space given one subject as compared with others of equal importance?

- Style: is the writing level that of the layman or the scholar, adult, or child? How readable is the work?

Revision: The encyclopaedia must be regularly revised. This would be effected through the publication of supplements annually. These supplements provide a summary of the major events that happened in the previous year.

Arrangement: how easily and quickly information could be located in the work. The arrangement of the main text can be classified or chronological or alphabetical or some other way. This is also a good indicator for evaluating a good encyclopaedia. The arrangement should be logical and easily understood by a lay reader. This is why the arrangement should be alphabetical. In addition, there should be numerous cross-references and a detailed index.

- Sequence: does the sequence of content follow classified, chronologic, geographic, tabular or alphabetic order? If alphabetic,, are the topics large or small?
- Indexing: is the main text arrangement adequately complemented by indexes and cross references.

Format: format refers to binding, quality of paper, typefaces, page make up, illustrations, diagrams, maps, etc. The minimum standards must be met. The encyclopaedia should be well-illustrated, good\aesthetic, etc.

- Physical make-up. Do binding, paper, type and layout meet minimum specifications?
- Illustrations: are the illustrations of good quality, are they of real significance and are they directly related to the text?

Special features and drawbacks- this distinguishes the work from other reference books of similar types. The bibliographies must be up to date and useful.

*Distinction- what features distinguishes this information source (reference book) from all others?

*Comparative values- how does the work compare to similar titles? Reviews: are they favourable?

- **Cost** - cost is also a factor that must be considered by a reference librarian. No matter how good a reference source is, if it is too expensive a library might not be inclined to purchase it. Thus, a reference source must be reasonably priced. A good encyclopaedia should not be too expensive. It should be affordable to most libraries.

Scope - One must also ensure that the scope of the reference source is correct. There are many reference sources that claim to be international and yet the coverage given to Africa may be limited or non-existent at all. Perusing the reference books will help to ensure that the content reflects the scope as stated by the publisher.

The scope of a reference book covers the purpose of the work as stated by the editor and how that purpose is fulfilled in the main work, the constancy in following the defined plan. It also includes the limitations of the work in regard to subject, class of readers, up to datedness of material and overall coverage.

- **Purpose**: to what extent is the statement of purpose in the preface fulfilled in the text?
- **Coverage**: how up to date is the material? Are all of the articles and bibliographies as recent as the last copyright date?
- **Bibliographies**: to what extent do the bibliographies indicate scholarship and send user on to additional information?
- **Currency**- The currency of the reference source is also important; a dated reference source may not serve a useful purpose. For example, a directory of library school teachers compiled in 1980 may serve no useful purpose in 2002 since many of the personalities listed in the reference source might have relocated elsewhere.
- **Audience** - The audience of the reference source must be clearly stated. From the table of contents, it must show that the audience claimed by the compilers is correct. Similarly, the format is important; a hard cover reference source is preferred to a paper cover. Also, the reference source should be well-arranged so that users can easily access any topic of interest.
- **Recency** – how up to date is the material? Are all of the articles and bibliographies as recent as the last copyright date?

7.2   Evaluating Internet Information

Evaluating internet information depends on what one is using the information for. For instance, if one is writing a factual report, dissertation, thesis, or paper that others will rely on for accurate content, it will be essential that one judiciously selects what information will be useful from the Internet. The following guidelines will assist one in evaluation of Internet information:

- Information sources
- Authorship
- Accuracy

- Verifiability
- Consistency of data
- Quality and
- Currency etc.

Bibliographies - to what extent do the bibliographies indicate scholarship and send the user on to additional information?

Summary for Study Session 7

At the end of this study session, you have learnt that:

1. Evaluation is a systematic determination of a subject's merit, worth and significance, using criteria governed by a set of standards. Evaluation of reference sources helps to determine the quality usefulness and target audience.

2. The following guidelines will assist one in evaluation of Internet information:
   - Information sources
   - Authorship
   - Accuracy
   - Verifiability
   - Consistency of data
   - Quality and
   - Currency etc.

Self-Assessment Questions for Study Session 7

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 7.1 (Testing Learning outcomes 7.1)

Define the term evaluation?

SAQ 7.2 (Testing Learning outcomes 7.2)

Explain Evaluation of Internet information

Post –Test

1. Discuss the checklists for determining authority, accuracy and regency.

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Study Session 8: Information and Communication Technologies (ICTs) In Libraries

Introduction

In this study session we shall consider the application of information and communication technologies (ICTs) to library and information service delivery. This will in turn enable us to examine ICT resources which made electronic reference services possible in libraries.

Learning Outcomes for Study Session 8

At the end of this study session, you should be able to;

8.1   Explain Information and communication technology (ICT)?

8.2   Explain the benefits and advantages of ICTs to libraries and users.

8.3   Differentiate between Internet and World Wide Web

8.1   ICT in Libraries

As globalization now becomes a new concept in academic research, effective research requires communication networking. This is because a researcher has to be familiar with developments in his or her field of research. He needs to be able to share findings with other persons working in related areas.

Information and Communication Technology (ICT) is the greatest facilitator of this process. Information Technology (IT) has been described as an omnibus term that combines computer and telecommunications technology.

Hence it is called Information and Communications Technology (ICT). It is a term which encompasses the notion of the application of technologies to information handling (generation, storage, processing, retrieval, dissemination, etc).

ICT has also been defined as the application of computer and other technology to the acquisition, organization, storage, retrieval and dissemination of information.

Figure 8.1 *students in the library*
Source: *http://www.leeming.wa.edu.au/index.php/about-us/facilities/ict*

8.2   What is ICTs?

In order to provide speedy information for the furtherance of education activities which the libraries are primarily concerned with, it has become imperative for libraries to use recent information and communication technology designed to ease information retrieval.

Information and Communication Technologies (ICTs) are tools and techniques for generating, manipulating, gathering, storing, retrieving, and dissemination of information. Following the introduction of ICT to library services, the library field has become flooded with nascent thoughts, ideas and applications.

In other words, the use of ICT changed the entire scenario of the library and produced different new names for it such as electronic library, digital library, virtual library also called library without walls.

In the process, library resources have moved ahead from simply being bibliographic to e-document, e-resources, e-books, e-journals etc. Along with these changes, many new services have been introduced into the library world that the whole role of the library is evolving into something new.

8.2.1 Benefits and Advantages of ICTs to libraries and users

Libraries are using ICTs to automate technical services, to provide efficient reference and information services, to network operations, such as cataloguing, authority, control, interlibrary loan and international bibliographic project. If properly utilized, ICT will help the growth and development of libraries in different direction. Some of the advantages of ICTs to the libraries are as follows:

- Allows easy integration of various activities
- Facilitate cooperation and the formation of library networks
- Help to avoid duplication of efforts within a library and between libraries in a network
- Eliminates some uninteresting and repetitive work
- Helps to increase the range of services offered
- Provide marketing opportunity of its services
- Ultimately may save and/ or generate money
- Increases efficiency

In-text Question

Some of the advantages of ICTs to the libraries include the following <u>except</u>

a. Allows easy integration of various activities
b. Facilitate cooperation and the formation of library networks
c. Eliminates some uninteresting and repetitive work
d. All of the above

In-text Answer

All of the above

Information and Communication Technologies (ICTs) also provide numerous benefits and advantages to the library users. Some of the benefits and advantages include:

- Provision of speedy and easy access to information
- Provision of remote access to users
- Provision of round-the-clock access to users
- Provision of access to unlimited information from different sources
- Provision of up-to-date information
- Provision of information flexibility that can be adapted by any individual according to his or her requirement.

• Facilitation of reformatting and combining of data from different sources. Information Technology is a tool, which provides opportunity for full organizational structure (i.e. to provide enhanced user satisfaction, cost effectiveness, integration, faster and simpler programmes, rapid response and easier operational procedures). A very crucial element in the use of ICT for research is the computer with Internet connection.

8.3   What is the Internet?

Figure 8.3 *Connection of computers*
Source:*http://businessdayonline.com/2016/02/how-internet-is-opening-up-educational-opportunities-for-people-in-emerging-economies/*

The internet is a mega tool in the world of Information Technology (IT) that has shattered the defensive barriers of time, space, culture and languages, thereby compressing the world into a 'global village'. The Internet grew out of the need for fast and efficient communication means which prior to this period was dominated by facsimile (Fax) technology with its attended cost and limitations.

But with the invention of the Internet, you can send volumes of text messages with audio/ visual attachment across the globe by the click of the mouse. It is a communal world so to speak.

Many scholars have attempted to define the internet. While all the definitions are not precisely the same, there exists a thread linking all of them. In other words, there are common elements among these definitions. These elements are "connectivity" and "information sharing". Let's consider some of these definitions:

Mbonu (2002) defines The Internet as a world- wide network of computers that allows for the transfer of data from one computer to another within the network using common protocol (http, gopher and telnet). **Omekwu** (2004) quoting some Internet

sources has defined the Internet as a super-network connecting many smaller networks together and allows all the computers to exchange information with each other.

Dictionary of the World Wide Web defines the Internet as world's largest information network; a global web of computer networks and inter-network of many networks all running the TCP/IP protocol.

To further understand the Internet, we need to imagine a globe of the world with national boundaries. Then imagine also millions of computers within each country linked together. Then imagine all the computes in all the countries of the world linked together. That is the internet.

Therefore the internet is a global connection of millions of computers in a single network. This connection allows people to share information such as data, programmes, pictures and music as well as storage disks. It is a network of networks that facilitate communication. The internet has no central management.

The only form of management is the internet protocol which entails the signing of internet addresses to the various computers connected to the internet. Every single computer has its own address and internet protocol (IP) number that can be used to locate it. An indispensable and veritable resource of the internet is the World Wide Web (WWW).

8.4 What is World Wide Web (WWW)?

Figure 8.2 *World wide web logo*
Source *http://www.classfmonline.com/1.8528122*

Dictionary of the World Wide Web (1998) defines The World Wide Web (WWW) as collection of standard protocol used to access information available on the internet. This information is in the form of documents linked together in what is called a *hypermedia system*. Hypermedia is the combined use of (text, image, video, and sound) in a web presentation page.

The World Wide Web (WWW) is an extra-ordinary means of effectively publishing and distributing books and other research resources and documents in multimedia capacity. To access information on the WWW, the researcher needs to be familiar with the web site address. A web site address is comprised of 'www' followed by name of the organization, domain name and place. Very important is the domain name.

8.5 Domain Name

The domain name is the unique name that identifies an internet site. Domain names have two or more parts usually separated by dot such as www.ui.edu.ng (web site of University of Ibadan). Domain Names fall into one of these categories:

.edu   for educational institution

.com   for commercial organization

.mil   for military

.gov   for governmental organization

.org   for non-profit organization

.net   for networking organization

.int   for international organization

8.6 The Internet Browser

A Browser is a software application programme that interprets and displays hypertext mark-up language (HTML) documents. It disentangles, catches and holds fast information that ispasted on the web. Internet Browsers provide a point and click interface for finding information on a network such as the Internet.

Mosaic was the first browser introduced in 1993 by the National Centre for supercomputing applications at University of Illinois at Champaign-Urbana. Today the two most popular Web Browsers are Netscape Communicator and Microsoft Internet Explorer.

These browsers combine a point-and- click interface designed with open architecture that is capable of integrating other internet tools such as electronic mail, FTP, Gopher, and UseNet news groups. This architecture makes it relatively easy to incorporate images, video, and sound into text documents.

Many web pages contain scholarly information such as journals, proceedings, patents, articles etc. In effect, people, business organizations and research institutions around

the world use the internet to access and retrieve information, to communicate and conduct research globally, and to access a vast array of services and on-line resources.

Online Searching

Online searching for information can be very fruitful because it connects you to vast resources in distant places that you can access quickly and easily. Before searching the Internet for information a researcher needs to have a clear sense of the kinds of information that is available on the Internet, how to start looking for information on the Internet, the strategies for internet searching, how to use search engines, the starting place on the web, how to evaluate and cite Internet sources.

Summary for Study Session 8

At the end of this study session, you have learnt that:

1. Information and communications technology (ICT) is a term which encompasses the notion of the application of technologies to information handling (generation, storage, processing, retrieval, dissemination, etc).

2. Some of the advantages of ICTs to the libraries are as follows:
   - Allows easy integration of various activities
   - Facilitate cooperation and the formation of library networks
   - Help to avoid duplication of efforts within a library and between libraries in a network
   - Eliminates some uninteresting and repetitive work
   - Helps to increase the range of services offered

3. Information communication technologies (ICTs) also provide numerous benefits and advantages to the library users. Some of the benefits and advantages include:
   - Provision of speedy and easy access to information
   - Provision of remote access to users
   - Provision of round-the-clock access to users
   - Provision of access to unlimited information from different sources

4   The World Wide Web (WWW) as collection of standard protocol used to access information available on the internet.

Self-Assessment Questions for Study Session 8

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 8.1 (Testing Learning outcomes 8.1)

Explain Information and communication technology (ICT)?

SAQ 8.2 (Testing Learning outcomes 8.2)

Explain the benefits and advantages of ICTs to libraries and users.

SAQ 8.3 (Testing Learning outcomes 8.3)

Differentiate between Internet and World Wide Web

References

Aina, L.O.(2004) *Library and Information Science Text for Africa.* Ibadan : Third World Information Services, 368p.

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Study Session 9: Research Resources on The Internet

Introduction

In the last study session we considered the application of ICTs to library and information services. We discussed that a very crucial element in the use of ICT for research in libraries, is the computer with Internet connection. In this studysession we are going to examine research resources on the Internet which make scholarly communication possible.

Learning Outcomes for Study Session 9

At the end of this study session, you should be able to;

9.1   Discuss the resources on the Internet.

9.2   Discuss the advantages of a Virtual Library over conventional libraries?

9.1   Research Resources on the Internet

Many of these valuable materials are also current, authoritative and top of the range professional publications. These include:

- **Online Public Access Catalogue (OPAC)**

The Online Public Access Catalogue (OPAC) is an electronic catalogue of a library's holdings. Most OPACs are accessible on the Internet. The research fellow can access holdings of Libraries in leading institutions on the globe. He can access materials in the Library of Congress of the United States of America at http://catalog.loc.gov/.
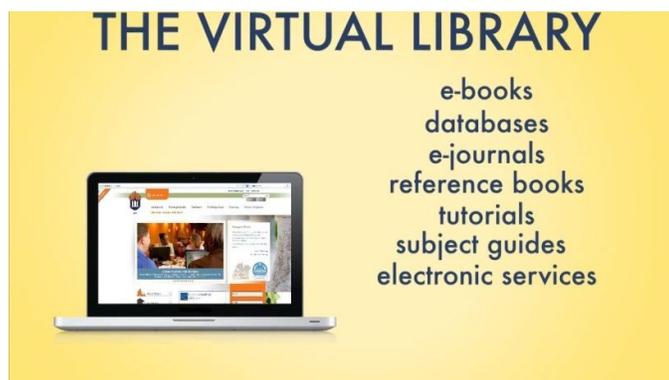
- **Virtual Libraries**

Figure 9.1*:The component of a virtual library*
Source: *https://www.youtube.com/watch?v=OEXYkdkWbqM*

The database producers generally distribute their information products in two ways – on paper and through an online connection which has resulted in the emergence of Virtual libraries.

A Virtual Library sometimes called Electronic Library or Digital Library is a Library without walls where a researcher can conduct research online, submit a questionnaire and launch comprehensive searches for full-text of major works in diverse fields of knowledge.

It is created by the use of highly sophisticated computer and telecommunication equipment. In virtual libraries, information materials are digitized, systematized and placed in a retrieval system in remote databases accessible through computers with internet connection.

It enables researchers to access multidisciplinary information round-the-clock from his home or office. The advantages of a Virtual Library over conventional libraries are as follows:

- It provides round-the-clock access to users
- The information resource content is global; many users in different location can access the same information at the same time.

- The information resource diversity is both print and multimedia.
- The navigational tools are simple but sophisticated.
- Public domain documents can be accessed and printed free of charge
- The information resources are flexible, easily accessed manipulated and updated.
- The information materials are current.
- Search strategies can be modified or changed

- **Online Journals and Magazines**

Figure 9.2 A Journal

http://read-magazines.com/read/mens_journal_october_2014_usa/

The need to keep abreast of professional news and development is of vital importance to researchers and the need to access published research results that find their first expression in scholarly/professional journals is indispensable to the work of the researcher. Online magazines and journals are among the information resources available to researchers.

A researcher can access specialized or general online databases on the Internet. The common practice is for the researcher's institution to subscribe to the databases and then assign a password that enables access to the boundless world of systematized and scientific research information data, report, journals, proceedings conference papers and textual articles in the database.

Examples of Online databases accessible on library portal include:

- EBSCO HOST DATABASES

Library subscribes to EBSCO Host databases to cater for the teaching/learning and research needs of its community. In selecting databases, subject covered is considered and selections cut across disciplines offered programmes. The databases subscribed to via EBSCO according to disciplines include:

ASP (Academic Search Premier) – Natural sciences

BSP (Business Source Premier) – Management sciences

HIC (Humanities International Complete) – Humanities

LISTA (Library & Information Science & Technology Abstract) – Librarianship.

Access credentials are as follows:

- HINARI

Health Inter Network Access to Research Information (HINARI) is a free access bibliographic database of major journals from about 70 major biomedical publishers and related social sciences across the globe.

- AGORA

Access to Global Online Research on Agriculture (AGORA) provides free or low cost access to major scientific journals in Agriculture and related biological, environmental and social sciences. Users can access 918 journals from the World's leading academic publishers. Researchers can Log on to AGORA portal and download relevant full text research articles.

- AJOL

African Journal Online (AJOL) is a database of journals published in Africa, covering the full range of academic disciplines. Users can browse through AJOL list and request for articles from journals published outside their native country. AJOL is being funded by African governments to promote communication of research findings to African researchers at less cost. No access credential is required for AJOL.

- RSC JOURNAL ARCHIVES

The Royal Society of Chemistry (RSC) Journal Archives provides access to all articles published by the Royal Society of Chemistry (and its forerunner Societies) from 1841 to 1996 since its launch in 2004. Access RSC through the library Portal.

All the databases except the EBSCO ones are free. Highly scholarly articles are published in web journal. Some are free while others are by subscription and others make their table of contents and abstracts available as public domain documents.

- **Online Text**

These include reference works, textbooks, reports and conference proceedings with the appropriate internet connectivity, the researcher can build a useful collection of electronic texts in his personal computer.

- **Discussion Groups and Lists**

A number of web discussion lists and groups exist on the internet. With an e-mail address, a researcher can join as many discussion groups as he wants. Joining discussion list/groups enables a researcher to:

    a. Get automatic news/information from group members

    b. Contribute to discussion on topical issues

    c. Ask questions and get reply to clarify concepts and ideas

6. Usenet Groups

Usenet groups, unlike the lists and groups are linked by a common e-mail address. Participants use mail address to access the group, contribute to the discussion, which normally covers a range of topics. A researcher can contribute to research topics in a Usenet group and also benefit from the contributions of others. It provides for cross-fertilization of ideas among professionals on the globe.

7. Government Sources

The Federal government has numerous sites on the internet with large quantities of information produced by various government bureaus and agencies, in addition to information produced by legislative proceedings. One could also check for references to appropriate government publications that are available in one's library.

9.2 How to find information on the internet

There are two approaches to searching the Internet for information:

1. Search Directories

Search directories are essentially descriptive subject indexes of web sites. They also have searching options. When a researcher connects to a search directory page, he finds a query box for entering keywords. The search engine at these sites searches only for the keyword matches in the database of the directories. Directories are excellent places to begin your search. Some of the best search directories include:

    ➢   Yahoo – http://www.yahoo.com

    ➢   Magellan – http://www.magellan.mckinley.com

    ➢   Galaxy – http://www.galaxy.einet.net/galaxy.html

    ➢   Excite – http://www.excite.com

General Subject Directories includes:

- Argus clearing house for subject-oriented internet resource guide – http://www.clearinghouse.net

- Awesome List – http://www.clark.net/pub/journalism/awesome.html

- Internet public Library – http://www.ipl.org

- World Wide Web Virtual Library – http://vlib.stanford.edu/overview.html

Books Online

The online book page – http://www.cs.cmu.edu/web/book.html

Electronic Listserv and Newsgroup: http://tile.net/lists/usenet

http://www.cis.ohio-state.edu/hypertext/faq/ibngusenet/news/group/top.html

Journals and Periodicals Online: http://english.hss.cmu.edu/journals.html

2. Search Engines

A search engine is a programme which when initiated by a search command from a user interface, examines a body of data for items satisfying the criteria and returns the item or their location to the interface. The data could be literary database or information about very large numbers of World-Wide Websites. Search engines are different from directories in that they search World Wide Websites,

Usenet Newsgroups, and other internet resources to find matches to the descriptor or keyword. Many search engines rank results according to a degree of relevance most search engines provide options for advanced searching to refine your search. Some of the best search engines include:

- **Google** on the Web:**www.google.com.** Google is a widely used search engine that uses text-matching techniques to find web pages that are important and relevant to a user's search.

- **Yahoois** a **searchengine**, subject directory, and web portal that has search engine capability and maintains an extensive directory. Others include:

  Alta Vista: http://altavist.digital.com

  BBC Search: http://www.bbc.co.

  Deja News: http://www.dejanews.com

  Einet Galaxy: http://www.einet.net

  Excite: http://www.excite.com

  Goggle: http://www.goggle.com

  Hotboot: http://www.hhotboot.com

  Infoseek Ultra: http://ultra.infoseek.com

  Lycos: http://www.lycos.com

Northern Light: http://www.nsearch.com

Open text: http://www.opentext.com

Starting point: http://www.stpt.com

Webcrawler: http://www.webcrawler.com

Yahoo: http://www.yahoo.com

Summary for Study Session 9

At the end of this study session, you have learnt that:

1. Internet grew out of the need for fast and efficient communication means. Resource of the Internet include:

   - Online Public Access Catalogue (OPAC),
   - Virtual Libraries,
   - Online Journal and Magazines
   - Online Text.
   - Discussion groups.

2. The advantages of a Virtual Library over conventional libraries are as follows:

   • It provides round-the-clock access to users

   - The information resource content is global; many users in different location can access the same information at the same time.
   - The information resource diversity is both print and multimedia.
   - The navigational tools are simple but sophisticated.
   - Public domain documents can be accessed and printed free of charge

Self-Assessment Questions for Study Session 9

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 9.1 (Testing Learning outcomes 9.1)

Discuss the resources on the Internet.

SAQ 9.2 (Testing Learning outcomes 9.2)

Discuss the advantages of a Virtual Library over conventional libraries?

References

Harris, M. (200) *The Writer's FAQs: A Pocket Handbook*. Upper Saddle River: New Jersey, 233P.

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Study Session 10: Electronic Reference Services in Libraries

Introduction

The objective of this study session is to discuss the application of information communication technologies (ICTs) to reference and information services in libraries. This is known as digital or electronic reference services. In this study session you will study the meaning of electronic and virtual reference services; types and components of electronic reference services and modes of electronic reference services.

Learning Outcomes for Study Session 10

At the end of this study session, you should be able to;

10.1   Define Electronic reference service?

10.2   Explain the types of Electronic reference?

10.3   Differentiate between Synchronous and Asynchronous

10.1 Information Technology

The largest single factor responsible for the significant changes in library operations and services in this century is undoubtedly the evolution of information technology (IT). The application of Information and Communication Technology (ICT) has changed the way the libraries serve their users to the extent that what looks a myth a few years back is becoming a reality now.

The primary aim of the library is to offer a variety of services to its clientele to meet their specific information needs. The use of classification, cataloguing,
Online Public Access Catalogues (OPACs), open access and other similar types of information retrieval techniques are all indirect form of assistance to users in order to find needed information in the library.
In the fast changing technological era, the advent of internet has become a powerful medium in the provision of multimedia information round-the-clock. The internet with its services like e-mail, World Wide Web (www), bulletin board services have changed the notion of traditional library into digital library and in the process removing barrier to information.

With the emergence of digital library and influence of internet, the concept of traditional reference service has been transformed into Digital reference service.
To meet the information needs of the users in changing technological environment, digital reference service which is an advancement of the traditional reference service has become natural solution. Digital reference uses the internet to allow people to connect with a librarian.

In the process of providing digital reference service the reference librarian receives question via e-mail or web interface, identifies the query and then decides appropriate course of action. He analyses the request and gets the type of information required.
Easily accessible digital reference service has become one of the hallmarks of the library and information services. There are a number of terminologies used todescribing non-traditional approach to reference services. These include: electronic reference service, virtual reference service, digital reference service, etc.

Reference service in libraries and information centres, is an important personalised service. Traditionally, it is a one-to-one service between user and reference librarian. The user is helped by the variety of sources available to meet his information needs.

Conventionally an individual institution provides reference service in a physical location, that is, in a library. With the development of technology, especially Internet technology, libraries have developed virtual (or "digital") reference services (VRS) in order to provide efficient and effective reference services to patrons in and out of the library and even to users not in the library's usual service community.

According to the guidelines provided by the Reference and Users Services Association (RUSA), virtual reference is a reference service, such as chat, videoconferencing, co-browsing, instant messaging (IM), voice over Internet protocol (VoIP) or email, conducted electronically through computers or the Internet. Most VRS are in real time and use synchronous communication.

Although reference services can be conducted using telephone, fax or mail, those are not virtual reference. Provision of VRS is not limited by location and time. In fact, most VRS are offered outside regular office hours. Some are even 24/7.

10.2   What is electronic reference service?

Electronic or digital reference service is an emerging trend of traditional reference service. It is the provision of reference services involving collaboration between library user and librarian, in a computer based medium. These services can utilize various media, including e-mail, web forms, chat, video, web customer call centre software, voice over internet protocol (VoIP), etc.

Electronic Reference Service is a Reference service designed for remote users and identified by a specific link from a library's website. Online Reference/ Online Information Services is the provision of help resources such as FAQs, electronic databases, and other electronic content and/or asynchronous or synchronous computer mediated communications (CMC) such as e-mail or chat.

In-text Question

_____It is the provision of reference services involving collaboration between library user and librarian, in a computer based medium.

   a. Digital reference service
   b. Computer mediated communications
   c. Virtual Reference Service
   d. Information

In-text Answer

a. Digital reference service

10.2.1   Virtual Reference Service

This is a reference service initiated electronically, often in real-time, where patrons employ computers or other Internet Technology to communicate with reference staff, without being physically present. Communication channels used frequently in virtual reference include chat, videoconferencing, Voice over IP, co-browsing, e-mail, and instant messaging.

The ALA website differentiates electronic and virtual reference by stating that while online sources are often utilized in the provision of virtual reference, use of electronic sources in seeking answers is not of itself virtual reference. Virtual reference queries are sometimes followed-up with telephone, fax, in-person and regular mail interactions, even though these modes of communication are not considered virtual.

If we analyze these statements, it is the "source" of information that makes the service "virtual". Now, using these various definitions, here is the definition that I would like to propose:

Electronic Reference Service is a library service that uses a librarian's knowledge to provide onsite or remote clients with relevant information based on a request that was initiated electronically. The sources of information may be print or non-print resources.

In-text Question

Virtual Reference Service is a reference service initiated electronically, often in real-time, where patrons employ computers or other Internet Technology to communicate with reference staff, without being physically present. TRUE or FALSE

In-text Answer

TRUE

10.2.2   Types of Electronic Reference Services

The most common electronic reference services used in most libraries include:

1. Email
2. Chat/IMs – Yahoo, MSN, AOL,
3. SMS
4. Blogs/Wikis/Online Social Networking Sites (Facebook, Twitter, etc.)

5. Websites examples include:Answers.com – a Q & A website http://www.answers.com/ Ask.com; http://www.ask.com, and Ask Yahoo http://ask.yahoo.com

6. Intranets

7. Webcasts/Podcasts

8. Tele/Video Conferences

10.2.3 Components of Electronic Reference

Adigital of electronic reference service incorporates the following four basic elements:

▪ The User

▪ The interface (web form; e- mail; chat; video etc.)

▪ Electronic resources (including electronic or CD –based resources; web resources; local digitized material etc.) as well as print resources

▪ The information professional

10.2.4 Modes of Digital reference service:

Based on the mode receiving and answering the queries, digital reference service can be broadly categorized into two types: Asynchronous and Synchronous

1. **Asynchronous**: This mode involves a time delay between the receiving question and providing answer such as e-mail reference service.

E-mail reference service

This is a simple, cheapest and cost effective service in which transaction involves back and forth exchange of information. User sends the query in the form of a message and receives an answer at a later time. User can ask a question even when the library is closed. Library gives reply by e-mail, fax or phone as he finds it convenient.

Advantages

a. Psychological barrier that stops shy users asking questions face to face is removed.

b. Useful for the users who are poor in oral communication

c. Physical boundaries are removed

d. It does not require extra software and no extra training

e. Reference librarian find more time to think , chalk and plan out a strategy and Finally search and give the answer.

f. No restrictions of working time, user can ask query any time.

g. This mode of receiving and answering questions is cost-effective.

Disadvantages
a. As face to face interaction is not possible, reference librarian is not able to get Clarification about his doubts arising in his mind after receiving the query.
b. Speed of receiving and answering questions depends on the volume of e-mail traffic and communications link over the internet.
c. It is difficult for reference librarian to judge the urgency of information.

Following are the some of the e-mail services provided to the users:
Inforocket (http://www.inforocket.com)
It is a fee based reference service. The price per question varies from$5 to $75.The user can ask questions which will be answered by the experts.

Askme (http://www.askme.com)
It is a free service where users can ask question and enter their e-mail addresses.

All Experts (http://www.allexperts.com)
It is free web based reference service where answers are provide with the help of Subject experts like lawyers, doctors, engineers and scientists.

Question Point (http://www.question Point.org)
This is a cooperative virtual reference service launched by the Library of Congress and OCLC, Dublin. Question Point combines an infrastructure of software and communication tools with a global network of cooperating libraries worldwide.

Britannica (http://www.britannica.com)
It is free information service on the web that allows the user to search and retrieve information from Encyclopedia Britannica as well as a number of other web resources.

Besides this there are other numbers of services available where user can conduct a search for a reference query:
Infoplease (http://www.infoplease.com)Internet Public Library (http://www.ipl.org) Find/svp (findsvp.com)

AskAuntyNolo   (http://www.nolo.com)   Reference   Desk
(http://www.referencedesk.org)

2. Synchronous

On the other hand, the synchronous does not involve time delay between the receiving question and providing answer. Example is the use of telephone. This transaction takes place in 'Real-Time' with an immediate response to the query i.e. the interaction between the user and reference librarian is live, therefore it is also called Real-Time Digital Reference Service.

Text based Chat/Instant messaging

This service is a supplement to the e-mail reference service as the exchange of information between the user and reference librarian is live (takes place in real time). To answer the questions online, the same criteria is followed as it is followed at the reference desk.

Librarians who work with digital reference tend to prefer web based or electronic sources because these sources are easier to access and share with the user. Most of the user nowadays wants to access online, full text sources. An example is the Live Help Service offered by Gates Head Public Libraries, which uses Swiss Software, Click and care.

The first step in asking questions in chat reference service is for the user to complete the log-in screen. After the question has been sent, software modifies all of the librarians who are available online and after monitoring the queue, the first available librarian answers the question. Several libraries ask for the identification number, as they offer the service to their institutional members only.

Reference librarian can use variety of such software with the ability to co browse, prewritten messages, typical greetings, sign off texts to save time and typing involved in reference interview. Reference librarian should develop skill to keep the interview short to prevent the system from logging off and users from getting bored while giving basic information.

This could be taken as challenge by the reference librarian since the average time of an interview in digital setting is ten minutes. This service is gaining more importance due to several features, such as:

- User query is solved in real-time i. e. Interaction between the user and the reference librarian is live.

- Speed of this service is faster than e-mail service, so user does not have to wait for the response.
- Clarification can be sought online.
- This service can be offered any time (24/7 basis).
- Reference librarian can attend multiple users simultaneously.
- Voice over Internet Protocol (VoIP) can be used by reference librarian to talk to users and hear them while connected and while locating the resources.
- If the user finds difficulty in finding information from any particular resource, reference librarian can demonstrate how to use the particular resource.
- Instant messaging needs software products such as AOL Instant Messenger and ICQ which must be downloaded on both librarians and patrons computer. These products allow librarians to communicate with the patrons in real time.

Disadvantages
- Typing speed and errors occurring during typing text may cause difficulty in communicating proper message between user and the reference librarian.
- User needs to type the complete question and reference librarian need to answer in typed format (depends on the speed and efficiency of both in typing.
- May be stressful for the user to wait for the answer every time.
- Reference librarian while busy answering several questions at a time, may not attend urgently needed questions.
- In developing countries technology is at premature stage, therefore the need of this service is yet to be recognized.
- It is a labour-intensive service.

Summary for Study Session 10

At the end of this study session, you have learnt that:

1. Electronic or digital reference service is an emerging trend of traditional reference service. It is the provision of reference services involving collaboration between library user and librarian, in a computer based medium. These services can utilize various media, including e-mail, web forms, chat, video, web customer call centre software, voice over internet protocol (VoIP), etc.

2. Digital reference service can be broadly categorized into two types: Asynchronous and Synchronous

Types of Electronic Reference Services
- Email
- Chat/IMs – Yahoo, MSN, AOL,
- SMS
- Blogs/Wikis/Online Social Networking Sites (Facebook, Twitter, etc.)
- Website examples include:Answers.com –http://www.ask.com, and Ask Yahoo http://ask.yahoo.com
- Intranets
- Webcasts/Podcasts

Self-Assessment Questions for Study Session 10

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 10.1 (Testing Learning outcomes 10.1)

Define Electronic reference service?

SAQ 10.2 (Testing Learning outcomes 10.2)

Explain the types of Electronic reference?

SAQ 10.3 (Testing Learning outcomes 10.3.)

Differentiate between Synchronous and Asynchronous

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Study Session 11: Video Conferencing or Web Cam Services

Introduction

In this study session, you shall examine video conferencing and Web Cam services that can be used for reference services in libraries.

Many libraries around the world now offer electronic reference services, or are in the process of considering whether or not to offer a digital reference service. A library service uses librarian's knowledge, print and non-print resources to answer reference queries that come from library patrons/clients through various channels (personal, phone, email, other electronic means).

Electronic Reference Service is a reference service designed for remote users and identified by a specific link from a library's website. Online Reference/ Online Information Services

Learning Outcomes for Study Session 11

At the end of this study session, you should be able to;

11.1   Define video conferencing

11.2   Explain Electronic Reference Service Needs Assessment

11.1 Video Conferencing

Videoconferencing (VC) is the conduct of a videoconference (also known as a **video conference** or video-teleconference) by a set of telecommunication technologies which allow two or more locations to communicate by simultaneous two-way **video** and audio transmissions.

Video Conferencing is introduced as a remedy to the communication problems inherent in text based services. This digital form includes visual elements where user and librarian can both use text and speech transactions and they can and hear each other, just similar to face to face interview.

This service is useful in distance learning, research and reference applications, and can be found in off-campus library services of University libraries.

Digital Reference Robots

An artificial intelligence used to response to questions when the reference librarian is not available, is known as Digital Robots. The most well-known of this type of service is Ask Jeeves. The operation of this service involves use of software to search the database of questions and answers. Some of the well-known examples of real time references are:

Collaborative Digital Reference Service (CDRS)

This is a free reference service project of Library of Congress and more than 100 partner libraries form various countries. The mission of this collaborative venture is to provide professional reference service to the users at anytime and anywhere through an international digital network of libraries and information centres.

It is a worldwide network of libraries in which OCLC builds and maintains a database which include three main components - first, Member Profiles(contain information on strength and features of members); second, Request Manager (software for entering, routing and answering reference questions; third,

Knowledge Base (a searchable database for questions and answers for future use),it supports reference efforts by combining the power of resources and manpower with diversity and availability of libraries and librarians anywhere.

Establishing Electronic Reference Service

Basically there are some factors to consider in beginning an ER or VR project. The first question to answer is "what do you want to achieve?" This would include which resources are readily available to start and run the service, who the users will be and

how the service will be delivered. Here is a sample of a project implementation diagram making use of an Instant Messaging

Electronic Reference Service Needs Assessment

Electronic reference service *Needs assessment* is a systematic process for determining and addressing *needs*, or "gaps" between current conditions and desired conditions or "wants". The discrepancy between the current condition and wanted condition must be measured to appropriately identify the *need.*

The establishment of electronic reference service is a consultative process that *requires* identification and involvement of different stakeholders. It should provide the rationale for the formulation of goals and objectives and identifies areas for potential improvements in current reference services. The scope and limits of the online service should be considered in allocating:

Resources - resources should achieve service objectives and reach project implementation.

Technology - technology is the application of scientific knowledge for practical purposes, especially in industry. "advances in computer technology" it can also defined as machinery and devices developed from scientific knowledge. It is the branch of knowledge dealing with engineering or applied sciences.

Technology often changes, so it is important to get the latest information on features, functionality and availability. Some websites that provides comparison of the different IM providers are:

1.   The Wikipediacommunityhttp ://en.wikipedia .org/wiki/ Comparison _of _instant _messaging_clients
2.   Instant Messaging Planet www.instantmessagingplanet.com/public/
3.   Kolaborawww.kolabora.com/news/2006/u9/ 28/instant_messaglng _tools_and _ technoiogy .htm
4.   Information Week. www.informationweek.comsearch for "messaging"

Summary for Study Session 11

At the end of this study session, you have learnt that:

1. Videoconferencing (VC) is the conduct of a videoconference (also known as a **video conference** or video-teleconference) by a set of telecommunication

technologies which allow two or more locations to communicate by simultaneous two-way **video** and audio transmissions.

2. Video Conferencing is introduced as a remedy to the communication problems inherent in text based services. This digital form include visual elements where user and librarian both can use text and speech transactions and they can and hear each other jus similar to face to face interview. This service is useful in distance learning, research and reference applications, can be found in off-campus library services of University libraries.

Self-Assessment Questions for Study Session 11

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 11.1 (Testing Learning outcomes 11.1)
Define video conferencing

SAQ 11.2 (Testing Learning outcomes 11.2)
Explain Electronic Reference Service Needs Assessment

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Study Session 12: Evaluation of Electronic Databases

Introduction

The objective of this study session is to examine comprehensive checklists for evaluation of foreign and international databases used for reference service.

Learning Outcomes for Study Session 12

At the end of this study session, you should be able to;

12.1 Define Database?

12.2 Differentiate between "site" and a "Database"

12.3 Determine the criteria in evaluating a Database

12.1 Criteria of Evaluation

Effective evaluation of databases depends on methods similar to those employed for evaluating printed works, such as purpose, authority and scope including formats for storage of database data, how data is accessed, how often the database is updated, "what hardware and software is necessary to make use of the database to its fullest", and to the speed and efficiency of search.

Because of many unexpected factors, these criteria unfortunately proved insufficient, and sometimes actually impossible, to apply to legal databases in the Internet.

The Internet carries both non-professional and professional information. In the former case, a "site" will contain almost any type of data, with Home Pages usually not disclosing either author or publisher, and the source of the information maybe

uncertain. For example, neither the reliability nor the authority for the data may be specified.

12.2 Databases
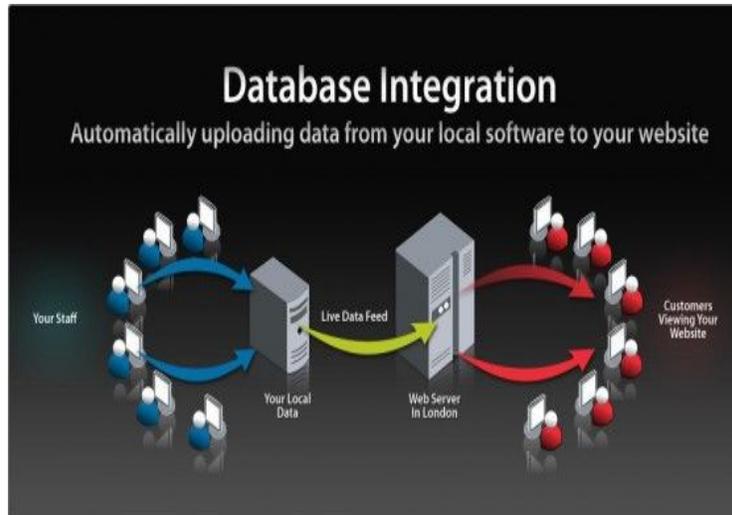
Figure 12.1 Database integration
Source http://www.tech-faq.com/database-integration.html

There is a distinct difference between a "site" and a "database". An Internet "site" can be any URL in the Internet which contains a document (e.g. a treaty, a decision, a law), a collection of data, or just an index to some sources gathered by some good-hearted persons.

There are many good Samaritans on the Internet. By contrast, "database" means subject-oriented data gathered and maintained in a server by an official entity, displaying a high interactivity with the user as well as search engine capability, data records files, query or sales transactions, product catalogue etc.

A "database" is a collection of data organized in such a way that its content can be easily accessed, managed, and updated. Generally, a database has its own server hosting HTML, PDF, RTF, CGI, etc., files. In selecting a database, there are comprehensive checklists for evaluating foreign and international databases. These include:

1. **Product Description and Main User Identification**

Database name; Database subject; Database address; Date of evaluation; Name of the person evaluating and monitoring the database; Official citation; Database contact person.

2. **Content Completeness**

Is this a full text database? Or, index and abstracts? Or, index only?

Reference librarians should be keen about the content completeness of a database before subscription. Many databases are still under construction or in the process of expanding their data. A relevant example is the European Union database in which new data is added nearly every month.

3. **Who is the Author/Publisher**

Does the database have standing authority? - Government? University? Legal institution? Private vendor? a Samaritan provider? How credible is the authorship? The ideal situation is that both author and publisher are the same entity: as an example - a government, parliament, department of justice, international organization, or a legal institute working under government supervision.

A fee-based database of a private vendor providing guarantee of authenticity of documents could be viewed as preferable to a database that may be free but does not provide such guarantee. The quality of the publisher is a guarantee in "creating quality controlled collections".[7] In the field of Internet databases, publisher and author are many times mainly the same.

4. **What is the Source of Data/Source Verification**

Sources of information and data should be verified. Is there a guarantee of content authenticity? Publication on the Internet portals can be misleading if sources are not verified.

5. **Language variation**

What is the language? Is it Vernacular, English, French, Spanish, German? Information should be in a well-known language? Many databases have no legal information in English, but only in other European languages. Such databases may not have sufficient audience in English speaking countries.

6. **Accuracy**

   In checking databases for accuracy the following should be considered:

   - Is the information correct? Fully or partly? Is it comprehensive?
   - Is the content as reliable as its print counterpart?
   - Does the resource have an organization or expert backing it?
   - Are there any obvious errors or omissions in the documents?

- Is the information of consistent quality?

Reference librarians should always compare online documents with the printed ones. This is an exercise that helps me see the differences or even the gaps.

7. Currency

Currency is an important consideration, since Internet databases have an advantage over print sources. Currency means answering to questions such as:

- Is the document page or Home Page dated?
- When was the last time updated?
- Are resources maintained?
- How often are they updated?
- Timeless
- Does the organization have a commitment to on-going maintenance and stability of the resource?
- Currency of links; The percentage of the dead and misdirected links.

Some work is timeless, explains Robert Harris, like the classic novels and stories; other work has a limited useful life because of advances in the discipline, and some work is quickly out-dated - as in the field of common law.

Therefore, we must decide whether the database information is still of value, and of how much value. An important idea connected with timeliness is the dynamic, fluid nature of information and the fact that constant change means constant changes in timeliness. The facts we learn today may be timely now, but tomorrow will not be.

8. Coverage

One of the major problems in evaluating Internet full text databases is that the records are very dynamic. The scope and the coverage can change overnight. A FAQ file or a description of a database should be visited once in a while. Databases cover sometime in full text only the last few weeks of a legal publication,

9. Archiving

- How long will the provider keep data?
- Unlimited time?
- Limited cumulation?
- Will the data be archived by another provider? Who?
- Do the database states archival responsibility?
- Do the database permits to make/obtain digital copies of content for archiving and for use in perpetuity?

Even though some databases are great and we are using them, fully relying on them, they do not have archiving commitment.

10. Search Quality/Findability

- Is there a link to an external search engine or is there a search engine embedded in the database?
- Is there a built in Thesaurus?
- Ease of use?
- Search engine capability: does it have:
  - Boolean logic?
  - Fuzzy logic?
  - Natural language processing?
  - Concept based searching?
  - Any restrictions (date, kind of legal document, citation, region)?

Another issue related to the findability is the terminology used for services. European or Asian databases use different names we are used to for labelling the same services. Linguistic "obscurity" coming from different legal concepts or from word by word translation into English of foreign legal concepts could be a problem of which the information specialist should be aware.

11. Workability

This term relates to the resource convenience and its effectiveness to use. Workability can include:

- user friendliness;
- resource access with standard equipment or special viewing and downloading instructions (instructions for decompressing files and all other technical assistance)
- password;
- network and software requirements;
- browsability and organization;
- a logical manner to locate the resources/ the site navigation/the site legend;

12. Interactivity with the User

Are there interactive files such as forms for queries, comments, requesting documents and ordering publications (using cgi scripts, perl programs)? Are they helpful? Is there a user support?

A clue of how developed services are in establishing web-based relationships with end users is the length of time it takes to respond to an email message submitted to a database.

13.   **Cost Over Prints Format**
- Are there hidden costs?
- Other costs that are not hidden?
- How much cost is attributable to:
    1. licensing of the content?
    2. providing access?

My belief is that a database should cost no more than its print counterpart, and that the ideal is to maintain one paper copy in addition to the electronic version. However, in this transition period, print may cover more than databases, so we may be paying a lot for a database that is still incomplete or growing, even though reliable.

14.   **Copyright Stipulations**

This refers to the condition or term in an agreement to use documents in the database. Usually, a database has to maintain a file listing the permission to reproduce and the protocols to be followed in such a situation.

Some databases want to be sure that aggressive users will not download huge amount of information, so the downloading is restricted to a certain amount of information. On the other hand, free databases want to have control over users so the registration may be necessary or a request for the permission to reproduce.

15.   **Licensing**
- Does the database permit fair use of all information for non-commercial educational, instructional and research purposes by authorized users, including unlimited viewing, downloading, and printing?
- Is the number of simultaneous users limited?

Searching

How effectively can information be retrieved from the resource? Is the resource organised in a logical manner to facilitate the location of resources? Is the organisational scheme appropriate, for example chronological for an historical source, or geographical for a regional resource? Is a useful search engine provided? What

operators and ranking features are available? Is the search engine interface intuitive? Does the search engine index the whole resource?

As we know, licensing agreements have become more prominent in the electronic era. A licensing agreement should cover those circumstances which a content owner and user/purchaser agree upon for the use of certain specified content in a digital environment.

First, we have to understand the nature of licensing content. After that, we have to decide what the appropriate type of arrangement is.

Conclusion

It is becoming clear that the future in providing information will be in electronic format. Therefore, it is critically important to establish from the outset clear standards for publication over the Internet. The information and research environments make the evaluation process a problem of content, access, point of view, server and database configuration.

The database evaluation depends on our patrons' needs, the realities of our workplace technical and legal resources. The main concern in the evaluation process is the Quality of Information found in the Internet and the ways of accessing it.

Criteria of evaluation are as well starting points in building electronic resource collections, developing Internet-based information services, or instructing users in the effective use of digital information.

Summary for Study Session 12

At the end of this study session, you have learnt that:

1. A database is a collection of data organized in such a way that its content can be easily accessed, managed, and updated. Generally, a database has its own server hosting HTML, PDF, RTF, CGI, etc. The lecture has discussed in detail the checklists for evaluating foreign and international databases as sources of electronic reference services.

2. In selecting a database, there are comprehensive checklists for evaluating foreign and international databases. These include:
   - Product Description and Main User Identification
   - Content Completeness
   - Who is the Author/Publisher
   - Currency
   - Variation
   - Accuracy

Self-Assessment Questions for Study Session 12

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 12.1 (Testing Learning outcomes 12.1

Define Database?

SAQ 12.2 (Testing Learning outcomes 12.2)

Differentiate between "site" and a "Database"

SAQ 12.3 (Testing Learning outcomes 12.3)

Determine the criteria in evaluating a Database

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Study Session 13: Introduction to Information Literacy
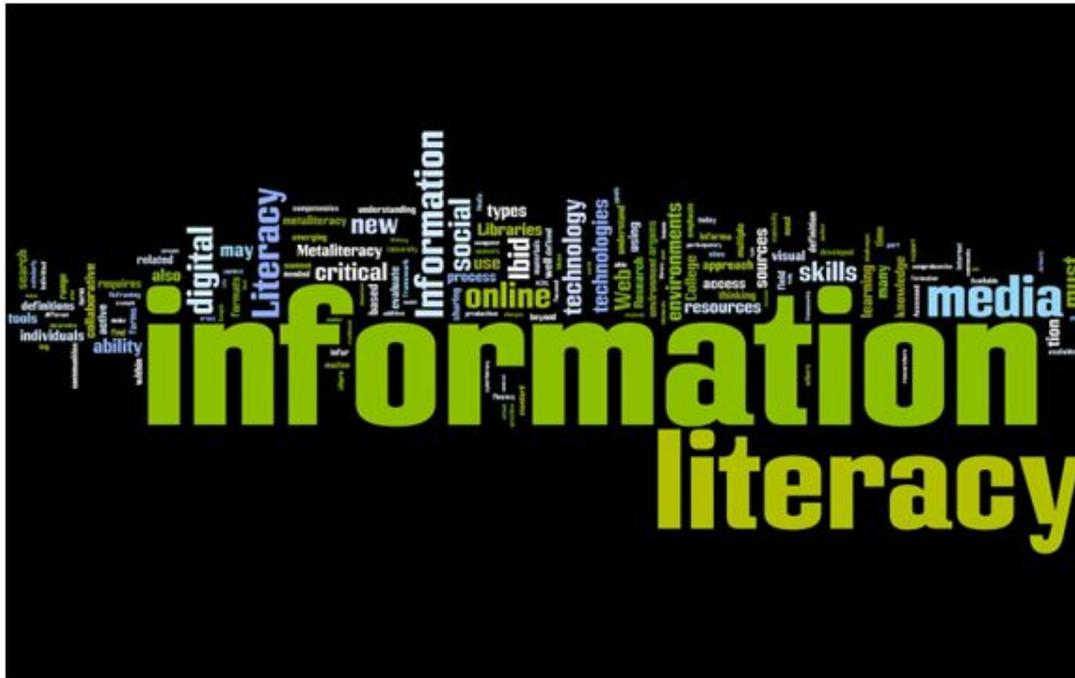
Introduction

The objective of this session is to introduce you to the concept of information literacy. In this study session you shall attempt the definition of literacy and study the importance of information literacy; aspects of information literacy and information literacy strategies.

Learning Outcomes for Study Session 12

At the end of this study session, you should be able to;

13.1   What is literacy?

13.2   What is information literacy?

13.3   The importance of Information Literacy

13.4   Information literacy strategies

13.1 Literacy

The library in a community provides a unique service that should be accessible to everybody. The provision of a library resources and information services should be one of the fundamental human rights of every citizen. The library is a store of all kinds of knowledge and information carriers that are meant to be consulted and used by readers with little or no expense on their part.

The services provided to users of individual libraries depend on the objectives of the parent organisation. Apart from providing information services, libraries also provide training and skills required for individuals to access information using the library tools and techniques. This is known in library and information science (LIS) as information literacy.

Literacy is fundamental to all areas of learning, as it unlocks access to the wider curriculum. Being literate increases opportunities for the individual in all aspects of life, lays the foundations for lifelong learning and work, and contributes strongly to the development of all four capacities of Curriculum for Excellence therefore, literacy is defined as:

Box 13.1: Definition of Literacy
Literacy is the set of skills which allows an individual to engage fully in society and in learning, through the different forms of language and the range of texts, which society values and finds useful.

Literacy experiences and outcomes promote the development of skills in using language, particularly those that are used regularly by everyone in their everyday lives.

Information literacy is a more holistic programme of user-education aimed at familiarising library user with information resource available in the library.

Many large libraries, especially university and research libraries emphasise the need for users to acquire skills that will enable them search for information independently on any aspect of knowledge using both traditional and electric methods of accessing information. Information literacy is geared towards attaining a competence in the use of library and computer networks/technologies.

13.2   What is Information Literacy?
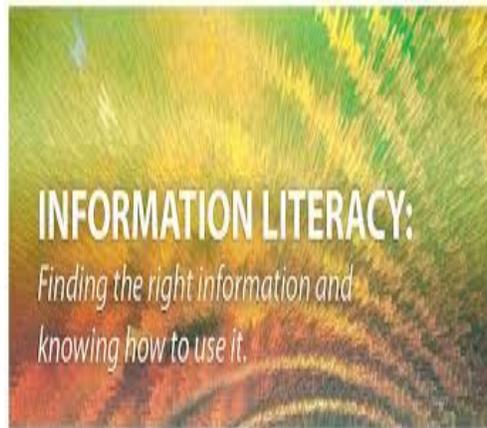
Figure 13.1 *Information literacy*
Source: *http://libguides.tccd.edu/infolit*

Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. As defined by American Library Association (ALA), information literacy involves concrete expectation, required competencies and aptitudes designed to satisfy the information needs of functioning members of society.

The central goal of information literacy is to cultivate necessary abilities and skills that ensure that individual's effectiveness and continued functioning in society is through effective navigation, evaluation and use of information. Libraries have been adjudged to be the information and literacy access points they and their children need to succeed in 21st Century information society.

Information literacy refers to a set of characteristics that transform an ordinary student into a "wise information consumer" and "lifelong learner." Information literacy isnot just something you "do" in college, rather, "information literate" is something you *become,* via your coursework and personal experiences and interactions with information.

In-Text Question

_____is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information

a. Library
b. References

c. Information literacy

d. Information age

In-Text Answer
c. Information literacy

Information Literacy is:
- The ability to articulate one's information need
- The ability to identify, locate and access appropriate sources of information to meet the information need
- The ability to effectively use information resources, regardless of format
- The ability to critically and ethically apply the information
- The ability to determine if the need has been adequately met

The importance of Information Literacy

Information literacy is important for today's learners because it promotes:

1. Problem solving approaches and thinking skills – asking questions and seeking answers,
2. Finding information,
3. Forming opinions,
4. Evaluating sources and making decisions fostering successful learners, effective contributors, confident individuals and responsible citizens.
5. It is at the core of the curriculum for excellence and literacy across learning experiences and outcomes – a responsibility of all practitioners.
6. Children and young people should not only be able to read information; but to work out what they trust should be placed on the information and to identify when and how people are aiming to persuade or influence them.
7. The need to be able to identify what is real and relevant, not just for school but also for learning, life and work.

Information literacy skills have been around for quite some time in different guises and several frameworks and definitions have been produced both nationally and internationally.

"For all societies, Information Literacy is becoming an increasingly important component of not only literacy policies and strategies, but also of global policies to promote human development" (UNESCO, 2003).

Information literacy also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. Because of the escalating complexity of this environment, individuals are faced with diverse, abundant information choices—in their academic studies, in the workplace, and in their personal lives.

Information is available through libraries, community resources, special interest organizations, media, and the Internet—and increasingly, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability.

In addition, information is available through multiple media, including graphical, aural, and textual, and these pose new challenges for individuals in evaluating and understanding it.
The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without a complementary cluster of abilities necessary to use information effectively. Information literacy forms the basis for lifelong learning.

It is common to all disciplines, to all learning environments, and to all levels of education. It enables learners to master content and extend their investigations, become more self-directed, and assume greater control over their own learning. An information literate individual is able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one's knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally

The definition of an information literate person extends beyond school and application to academic problems--such as writing a research paper--and reaches right into the workplace. Information literacy is also important to effective and enlightened citizenry, and has implications that can impact the lives of many people around the globe.

The ability to use information technologies effectively to find and manage information, and the ability to critically evaluate and ethically apply that information to solve a problem are some of the hallmarks of an information literate individual.

Other characteristics of an information literate individual include the spirit of inquiry and perseverance to find out what is necessary to get the job done.

We live in the Information Age, and "information" is increasing at a rapid pace. We have the Internet, television, radio, and other information resources available to us 24 hours a day, 7 days a week. However, just because so much information is so easily and quickly available does not mean that all of it is worthwhile or even true.

Because of resources like the Internet, finding high-quality information is now harder than ever. Finding the good stuff is not always quick! And the good stuff does not always come cheaply, either! (In short, to make it in today's Information Age, you have to be even smarter--not dumber--than your typewriter-schlepping predecessors!)

To make matters worse, just because you know how to use a particular information technology today does not mean that there is not another one right behind it that you will have to learn how to use tomorrow!

Once seemingly exotic technologies like "word processing" and "electronic mail" are now commonplace, but at one time, they were amazing and revolutionary. (To some of us, they still are).Today's employers are looking for people who understand and can adapt to the characteristics of the Information Age. If a student has "learned how to learn," upon graduation, they are a much more attractive job candidate.

An information literate individual, with a strong analytical, critical thinking and problem-solving skills, can be expected to be an adaptable, capable and valuable employee, with much to contribute.

13.3 Aspects of Information Literacy

Some of the aspects of information literacy include using information technologies, such as personal computers, e-mail, software programs, and the Internet.

Other aspects of information literacy involve the evaluation of the information you obtain using the Internet and online electronic resources. Still other components of information literacy regard the ethical use of information and information technologies.

A couple of the primary goals of information literacy are to get people thinking critically about the information they encounter, and building in people the ability to use that information to create new knowledge.

Information literacy is related to information technology skills, but has broader implications for the individual, the educational system, and for society. Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals. Information literate individuals necessarily develop some technologic skills.

Information literacy, while showing significant overlap with information technologic skills, is a distinct and broader area of competence. Increasingly, information technology skills are interwoven with, and support, information literacy.

A 1999 report from the National Research Council promotes the concept of "fluency" with information technology and delineates several distinctions useful in understanding relationships among information literacy, computer literacy, and broader technological competence.

The report notes that "computer literacy" is concerned with rote learning of specific hardware and software applications, while "fluency with technology" focuses on understanding the underlying concepts of technology and applying problem-solving and critical thinking to using technology.

To this end, Shapiro and Hughes outlined a "prototype curriculum" that encompassed the concepts of computer literacy, library skills, and "a broader, critical conception of a more humanistic sort", suggesting seven important aspects of a holistic approach to information literacy:

1. **Tool literacy** or the ability to understand and use the practical and conceptual tools of current information technology relevant to education and the areas of work and professional life that the individual expects to inhabit.
2. **Resource literacy** or the ability to understand the form, format, location and access methods of information resources, especially daily expanding networked information resources.
3. **Social-structural literacy** or understanding how information is socially situated and produced.
4. **Research literacy** or the ability to understand and use the IT-based tools relevant to the work of today's researcher and scholar.

5. **Publishing literacy** or the ability to format and publish research and ideas electronically, in textual and multimedia forms ... to introduce them into the electronic public realm and the electronic community of scholars.

6. **Emerging technology literacy** or the ability to continuously adapt to, understand, evaluate and make use of the continually emerging innovations in information technology so as not to be a prisoner of prior tools and resources, and to make intelligent decisions about the adoption of new ones.

7. **Critical literacy** or the ability to evaluate critically the intellectual, human and social strengths and weaknesses, potentials and limits, benefits and costs of information technologies.

13.4   Information literacy strategies

The first step in the Information Literacy strategy is to clarify and understand the requirements of the problem or task for which information is sought. The basic questions asked at this stage are**:**

- What is known about the topic?
- What information is needed?
- Where can the information be found?

2. **Locating:** The second step is to identify sources of information and to find those resources. Depending upon the task, sources that will be helpful may vary. Sources may include books, encyclopedias, maps, almanacs, etc. Sources may be in electronic, print, social bookmarking tools, or other formats.

3. **Selecting/analyzing:** Step three involves examining the resources that were found so as to ascertain their usefulness in solving the problem. The useful resources are selected and the inappropriate resources are rejected.

4. **Organizing/synthesizing:** This fourth step relates to the organization and processing of the selected information, so as to develop the acquired knowledge and proffer solutions. Examples of basic steps in this stage are:

- Discriminating between fact and opinion
- Basing comparisons on similar characteristics
- Noticing various interpretations of data
- Finding more information if needed
- Organizing ideas and information logically

5. **Creating/presenting:** In step five the information or solution is presented to the appropriate audience in an appropriate format. A paper is written. A presentation is made. Drawings, illustrations, and graphs are presented.

6. **Evaluating:** The final step in the Information Literacy strategy involves the critical evaluation of the completion of the task or the new understanding of the concept. Was the problem solved? Was new knowledge found? What could have been done differently? What was done well?

The Big6 skills have been used in a variety of settings to help those with a variety of needs. For example, the library of Dubai Women's College, in Dubai, United Arab Emirates which is an English second language institution, uses the Big6 model for its information literacy workshops.

According to Story-Huffman (2009), using Big6 at the college "has transcended cultural and physical boundaries to provide a knowledge base to help students become information literate" (para. 8). In primary grades, Big6 has been found to work well with variety of cognitive and language levels found in the classroom.

Summary for Study Session 13

At the end of this study session, you have learnt that:

1. Information literacy involves concrete expectation, required competencies and aptitudes designed to satisfy the information needs of functioning members of society. The central goal of information literacy is to cultivate necessary abilities and skills that ensure that individual's effectiveness and continued functioning in society is through effective navigation, evaluation and use of information.

2. Information literacy is a set of abilities requiring individuals to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. As defined by American Library Association (ALA), information literacy involves concrete expectation, required competencies and aptitudes designed to satisfy the information needs of functioning members of society.

3. The first step in the Information Literacy strategy is to clarify and understand the requirements of the problem or task for which information is sought. The basic questions asked at this stage are**:**

- What is known about the topic?
- What information is needed?
- Where can the information be found?

Self-Assessment Questions for Study Session 13

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 13.1 (Testing Learning outcomes 13.1)

What is literacy?

SAQ 13.2 (Testing Learning outcomes 13.2)

What is information literacy?

SAQ 13.3 (Testing Learning outcomes 13.3)

The importance of Information Literacy

SAQ 13.4 (Testing Learning outcomes 13.4.)

Information literacy strategies

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Study Session 14: Information Seeking Behaviour and Models

Introduction

In this session you shall consider information seeking behaviour and models that explain information seeking pattern of an individual. You will also examine the information environment as determinant of individual information behaviour.

Learning Outcomes for Study Session 14

At the end of this study session, you should be able to;

14.1 Explain the term 'Information seeking behaviour?

14.2 Why are information seeking models important in information seeking behaviour?

14.1 Information Seeking

Information seeking behaviour is a broad term, which involves a set of actions that an individual takes to express information needs, seek, evaluate and select information, and finally use the information to satisfy his or her information needs.

A review of the literature on information seeking behaviour shows that information seeking has generally been accepted as dynamic and non-linear. it encompasses a range of activities inherent in the information seeker during information search process as interplay of thoughts, feelings and actions.

Information-seeking behaviour or human information behaviour has been described as a sub-discipline within the field of library and information science which focuses on how people need, seek, manage, give and use information in different contexts.

It has also been described as an aspect of scholarly work of most interest to academic librarians who strive to develop collections, services, and organizational structures that facilitate information seeking.

Information seeking is a basic activity indulged in by all people and manifested through a particular behaviour. Information seeking behaviour has also been described as a micro-level of behaviour employed by the searcher in interacting with information system of all kinds, be it between the seeker and the system or the pure methods of creating and following up of a search.

The concepts of information seeking, retrieval, and behaviour are objects of investigation in information science. Within this scientific discipline a variety of studies has been undertaken to analyse the interaction between individual and information sources in respect of their peculiar and specific information need, task, and context.

Information seeking has been found to be linked to a variety of interpersonal communication behaviours beyond question-asking, to include strategies such as candidate answers.

The information seeking behaviour i.e. strategies and action undertaken to locate discrete knowledge elements varies from one user group to other user group. A user group may be an end user. Thus the study of the user's seeking behaviour has become essential to explain the observed phenomena of information use; and the improvement of the utilization of information through manipulation of essential conditions.

The new information and product should be matched with the user's need. The system has to direct the supply of information more specifically towards the identified category of users and adapt the infrastructure of information services to the abilities and habits of the user. The attention has to be directed from technology to the end user.

The analysis of the definition of the Information Science set forth by different specialists reveals that the 'user of information' has been invariably emphasised. According to Wilson, the Information Science comprises of sets of practices and related disciplinary studies, which is concerned with the transmission, organisation, storage and use of information, together with studies of user of information.

The human is the ultimate information processor and user of information. We need to provide a service that identifies the user needs and helps to meet them.

The information professionals must learn to identify the true information needs of our society. He must learn to cope with dynamic rather than static information needs.

In-text Question

Information-seeking behaviour or human information behaviour has been described as a sub-discipline within the field of library and information science which focuses on how people need, seek, manage, give and use information in different contexts. TRUE or FALSE

In-text Answer

TRUE

14.2   Information Seeking Models

The research models developed in these studies vary in their level of scope. **Wilson** (1999) therefore developed a nested model of conceptual areas, which visualizes the interrelation of the here mentioned central concepts.

Wilson defines models of information behaviour to be "statements, often in the form of diagrams that attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behaviour" (Wilson, 1999: 250).

Weiler (2005) observes that the first model for study of information seeking behaviour in the general population was developed by James Krikelas in 1983. This model suggests the steps of information seeking as follows:

- Perceiving a need,
- The search itself,
- Finding the information, and
- Using the information, which results in either satisfaction or dissatisfaction?

Based on Krikelas' model, people begin to seek for information when they perceive that the current state of knowledge is less than that needed to deal with some issue (or problem).

Marchionini and **White**, 2008's description of the information-seeking process consists of:

1. Recognizing a need for information,
2. Accepting the challenge to take action to fulfill the need,
3. Formulating the problem,
4. Expressing the information need in a search system,
5. Examination of the results,
6. Reformulation of the problem and its expression, and
7. Use of the results.

These represent the core actions within general information seeking tasks. Standard Web search engines support query specification, examination of retrieval results, and to some degree, query reformulation. These models are based primarily on observations of people engaged in information seeking processes.

Information behaviour has been the subject of many studies in the last thirty years. The highlights of research on information behaviour include the Ellis (1989) behavioural model of information searching strategies, Kuhlthau's (1993) information search process, and Wilson's (1997) problem-solving model.

Many others contribute to shape our general understanding of information seeking. Collectively these studies suggest that information seeking exists within context, and is a linear process consisting of stages and interactive activities.

Most times students' information seeking behaviour involves active or purposeful information seeking as a result of the need to complete course assignments, prepare for class discussions, seminars, workshops, conferences, or write final year research papers.

14.3   Information Seeking Behaviour

In order to satisfy the information need, the user actively undergoes the information seeking process. The attempt of the user in obtaining the needed information results from the recognition of some need, perceived by the user. The following process takes place in the information seeking behaviour:

- Identifying objective
- Definitely need
- Accessing information systems
- Establishing sources of information
- Information acquisition
- Use of information
- Satisfaction/ dissatisfaction

Thus, information seeking behaviour essentially refers to the strategies and actions undertaken to locate discrete knowledge elements. It can be said that the behaviour which yields the highest information satisfaction is the best.

Information use studies over the years have attempted to explain information use phenomena to understand information use behaviour and improve information use by manipulating essential conditions. The information seeking behaviour results from recognition of some need experienced by the user.

Over the years there has been a change in the understanding of the use behaviour. More recently Wilson in the model of factors influencing the needs and information seeking behaviour opines that the full range of human personal needs, such as physiological, affective and cognitive needs are at the root of motivation towards information seeking behaviour.

Belkin has extended the psychological approach with the inquiry into the reasons for seeking information and development of the concept of an 'Anomalous state of knowledge (ASK)' which hypothesises that information need arises from the recognised anomaly in the users state of knowledge concerning some topic or situation and that in general, the user is unable to specify precisely what is needed to resolve that anomaly.

Information seeking behaviour is seen as related to some problem situation in the relationship between the user and users' model of the world. Wersig's concept of the problematic state depicts internal models of knowledge, beliefs, goals environment and situations forming the basis of information need & information seeking behaviour.

The best way to view information behaviour is to treat it as an aspect of human behaviour in general. The information seeking pattern of an individual is a determinant of that individual information environment, which consists of:

1. Background and characteristics of the individual.
2. The nature and type of information need with which he/she is confronted.
3. The type and availability of information providers.
4. Information providers capability in responding to a request.
5. Existence of barriers that serve to diminish or deter the effective linkage between information provider and seeker, and
6. The degree and satisfaction perceived by an individual with the ability of one or more information providers to respond to his/her information needs.

The information use is that seeking behaviour that leads to the use of information in order to meet the individual needs. User component will have bearing on almost all aspect of library and information system.

The enquiries about users with a need to understand their characteristic features, needs, preferences, practices, opinions, attitudes, behaviour evaluation, etc with respect to library and information services that are offered or likely to be offered or need to be offered.

The ultimate aim is to help designing, altering, evaluating and improving efficiency and effectiveness of library and information systems and their products/service in meeting their predetermined goals. The study of users and their information needs help in discovering:

- Characteristics,
- Information needs,
- Behaviour, attitudes, opinions, priorities, preferences and evaluation of users.

As Marchionini, 1989 puts it: Information-seeking is a special case of problem solving. It includes recognizing and interpreting the information problem, establishing a plan of search, conducting the search, evaluating the results, and if necessary, iterating through the process again. In order to design successful search user interfaces, it is necessary to understand the human information seeking process, including the strategies people employ when engaged in search.

Summary for Study Session 14

At the end of this study session, you have learnt that:

1. Information seeking behaviour is a broad term, which involves a set of actions that an individual takes to express information needs. It involves seeking, evaluating and select information, and finally using the information to satisfy his or her information needs.

2. Marchionini and White, 2008's description of the information-seeking process consists of:

- Recognizing a need for information,
- Accepting the challenge to take action to fulfill the need,
- Formulating the problem,
- Expressing the information need in a search system,
- Examination of the results,

- Reformulation of the problem and its expression, and
- Use of the results.

3 The following process takes place in the information seeking behaviour:

- Identifying objective
- Definitely need
- Accessing information systems
- Establishing sources of information
- Information acquisition
- Use of information
- Satisfaction/ dissatisfaction

Self-Assessment Questions for Study Session 14

Now that you have completed this study session, you can assess how well you have achieved its Learning outcomes by answering the following questions. Write your answers in your study diary and discuss them with your Tutor at the next study Support Meeting. You can check your answers with the Notes on the Self-Assessment questions at the end of this Module.

SAQ 14.1 (Testing Learning outcomes 14.1)

Explain the term 'Information seeking behaviour?

SAQ 14.2 (Testing Learning outcomes 14.2)

Why are information seeking models important in information seeking behaviour?

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